

ST FORMAT

31

programs to
help you get
more from
your Atari ST

Make that connection!

Boost the power of your ST –

– with our *humungous* guide
to those essential plug-ins,
beginning on page 22

- All about AUTO programs – page 105
- 14 packed pages of top ST tips
- MiG-29: stomach-churning or what?

ST FORMAT COVER DISK 20

TURRICAN 2

Fully playable demo
of the scorching
new shoot-'em-up
from Rainbow Arts



- 13 AUTO programs to customise your ST
- 2 Password programs to lock snoopers out
- Party Database – 100s of cocktail recipes

A

DISK FORMAT BY ROB NORTEN



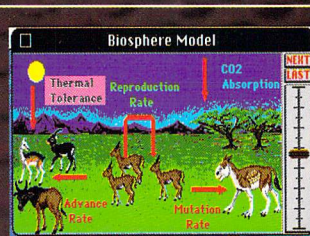
MASTERSOUND 2

- Microdeal's new sampler
- 8 GFA BASIC Tutorial programs
- Fractal planet & map generator
- 3 programs to speed disk access
- TV and video title creator

B

31

PROGRAMS! ALL STE COMPATIBLE!



EXCLUSIVE!

“Why I am utterly sick
of *Sim City*” – by the
man who designed it!
(Turn to page 37)

On review: 20 blistering new games!

Captive exclusive – the programmer's own secrets!
Music – Creator on test ■ 3 pages stuffed with top PD

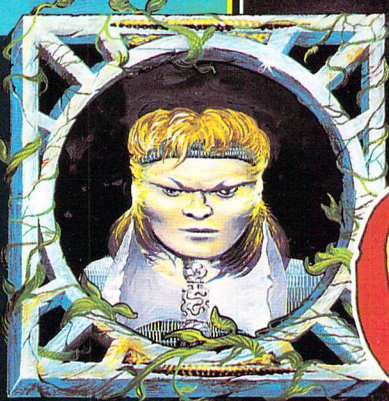


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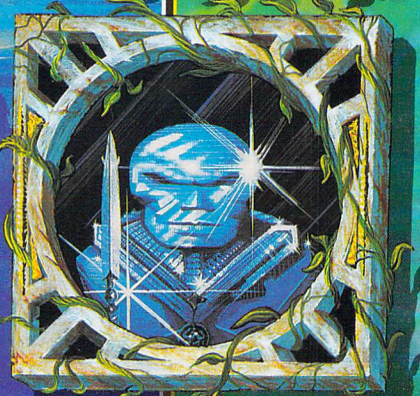
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QUEST

III



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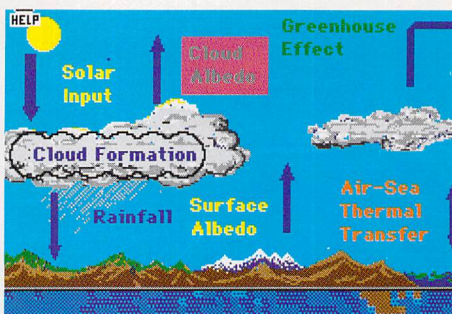
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The name in Coin-Op Conversions.

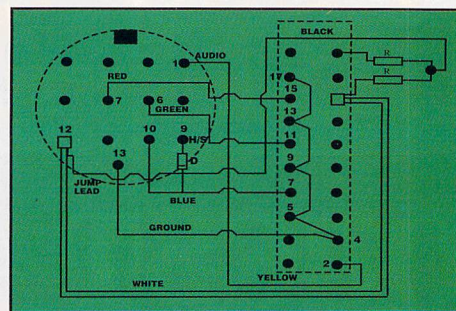
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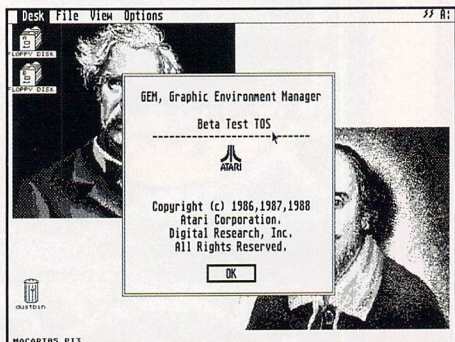
Captive's programmer breaks his silence and reveals all to *FORMAT* 88



Exclusive! Sim City creator Will Wright talks about his next fantastic simulator 36



Improve your ST's performance with our DIY hardware tips 127



Your complete guide to setting up those labour-saving AUTO folders 105



The MiG-29 – the world's most advanced fighter plane? We pull out all the stops to see how Domark's simulator shapes up 52

You've got your hands on the Porsche of home micros so now start putting the ST's power to good use.

In this month's special reference-guide edition, we make a detailed study of the hardware you can plug into your ST. We shatter the myths about what goes where, advise you on what to watch out for and recommend the best buys in the stores. Go on, make the connection! Turn to page 22

**pump
up the
power**

**ST
FORMAT**

ABC January – June 1990 50,246

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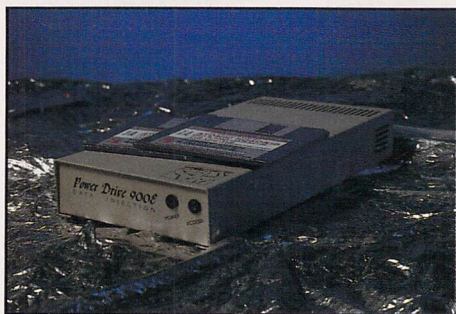
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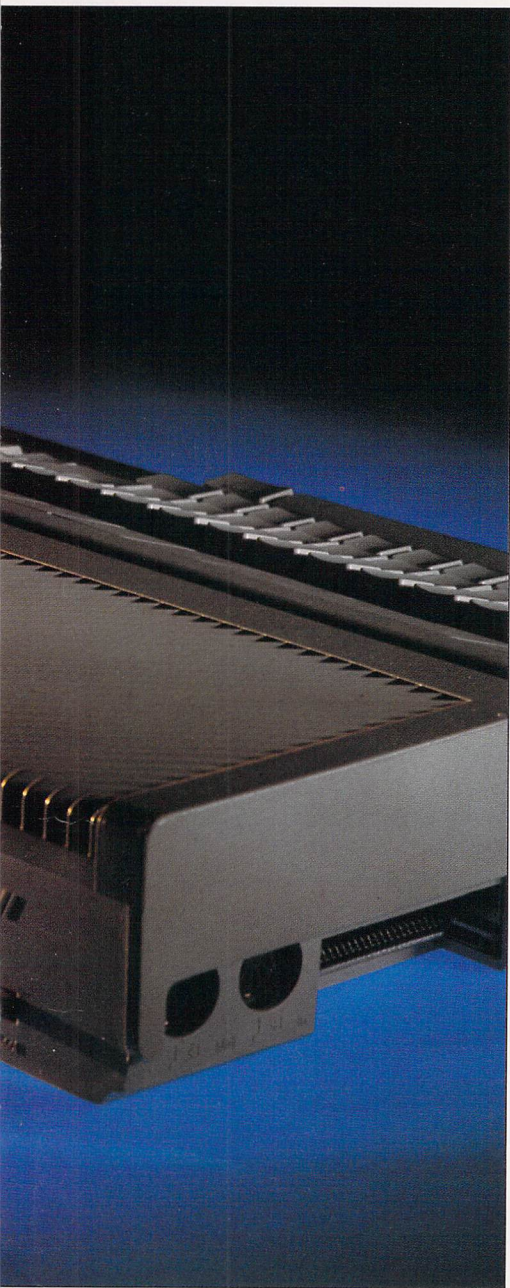
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**Win one of four Power
slimline hard drives in our
great new compo.....35**



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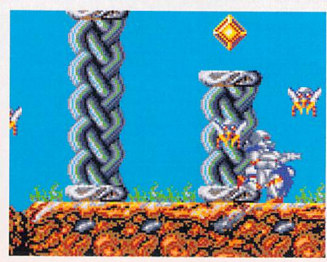
Screenplay extra81



COVER DISK p43

A sensational 31 programs (loud thud as jaw hits floor) have been mercilessly pressed, punched and positively pulverised to squeeze them all onto this month's action-packed Cover Disk. It's the *biggest* bugger ever!

Turrican 2 and Mastersound 2



Fire up your flamethrower and bash those bodacious bad guys in this level one demo of the terrific *Turrican 2* from Rainbow Arts. Then when your heart gives way, take a deep breath, settle down and make music with our exciting demo of Microdeal's brand new *Mastersound 2* sampling package

Plus all this...

13 time-saving AUTO folder programs ■ Two password programs to secure your ST from prying eyes ■ A party database with hundreds of cocktail recipes ■ Eight – yes, eight – GFA Basic programs to use and modify ■ A fractal planet generator ■ Three essential utilities for disk caching and speeding up disk accesses ■ A video titling program which enables you to add professional credits to your home movies

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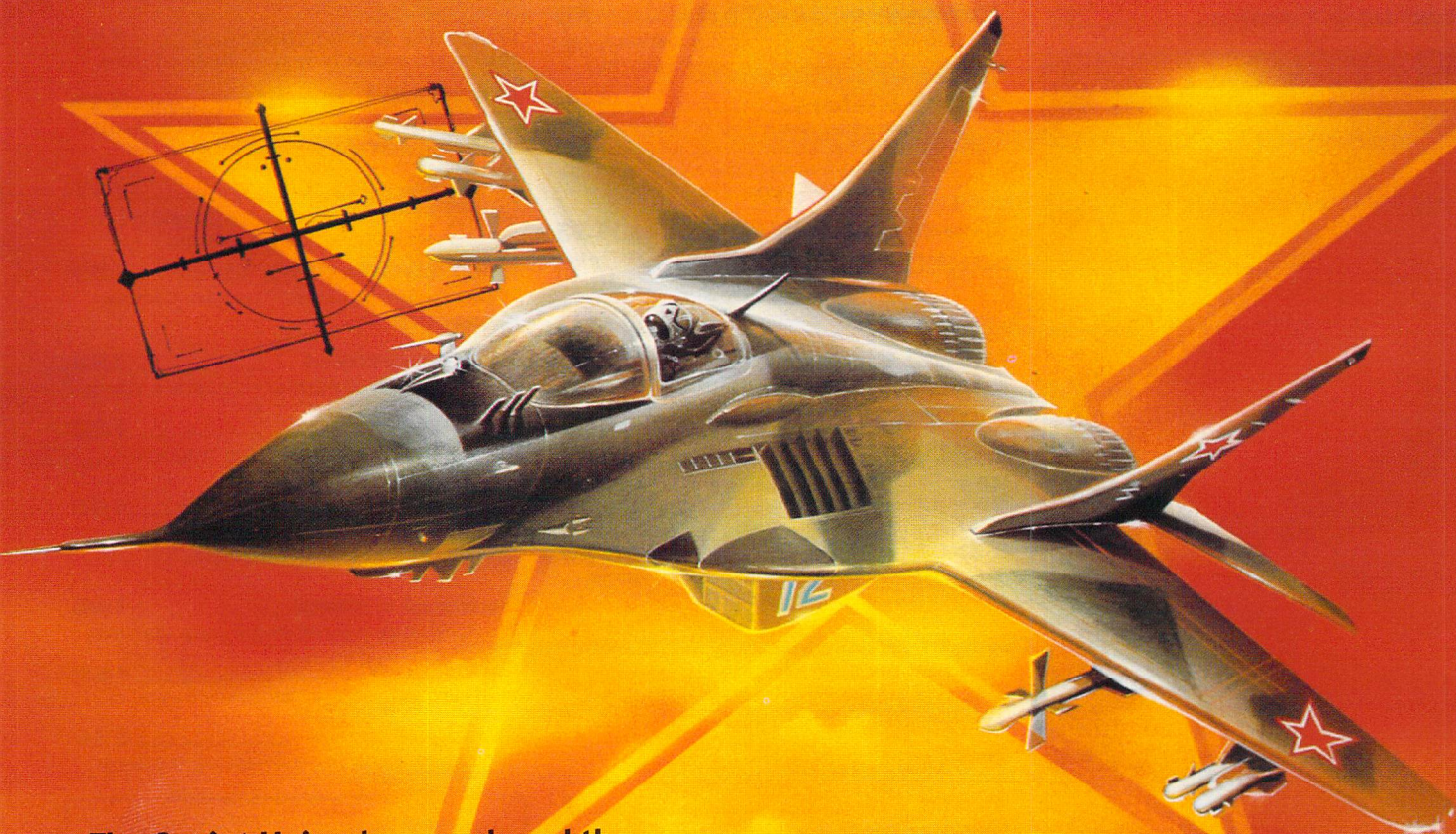
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ST FORMAT, the biggest-selling ST mag in Britain by a good 20,155, comes at you from Future Publishing, also responsible for *New Computer Express*, *Amiga Format*, *Amstrad Action*, *Commodore Format*, *Your Sinclair*, *PC Plus*, *Sega Power*, *8000 Plus*, *Classic CD* and watch this space...

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MiG-29

F U L C R U M



The Soviet Union has produced the finest air superiority fighter in the World.

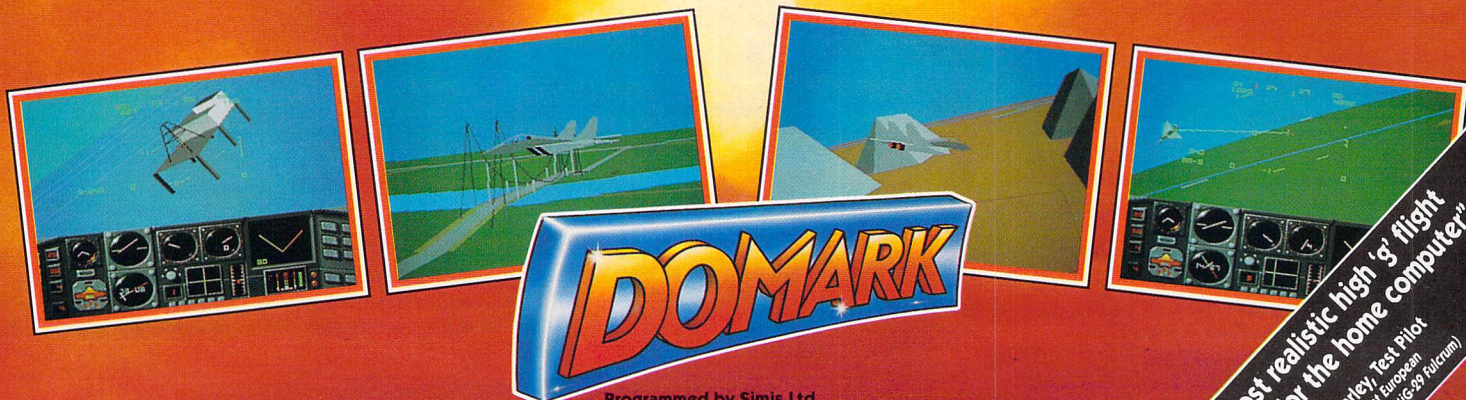
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- ✧ Unique missions featuring real world scenarios



Programmed by Simis Ltd.

Software, Instructions, Artwork and Packaging ©1990 Domark Software Ltd.

MiG-29 photographs courtesy of John Lake/Osprey Publishing ©1990

Published by Domark Software Ltd., Ferry House, 51-57 Lacy Road, London SW15 1PR. Tel: (081)-780 2224.

Available on: Amiga, Atari ST, IBM PC 3.5" & 5.25". Amiga, Atari ST, IBM PC screenshots.

"The most realistic high 'g' flight simulator for the home computer"
John Farley, Test Pilot
(The first European to have flown a MiG-29 Fulcrum)

ATARI ANNOUNCE 2.5 MILLION STs WORLDWIDE

by Andrew Hutchinson

Atari have announced excellent end of year sales figures. The company claim to have sold 200,000 STs over the year, giving them an installed user base of some half a million in this country alone. Peter Staddon, Atari UK's Marketing Manager, revealed that "there are now two and a half million STs worldwide," and he promises bigger and better things for this year.

Atari are predicting a 30% growth rate over this coming year, mainly because of major new products. They are currently evaluating the Mega STE, so a launch date some time within the next two months is expected. However, they were very tight lipped about the possibility of a new laptop and the Panther games console which was shown behind closed doors at the CES show in Las Vegas.

Staddon pointed to the £6 million Atari invested in advertising during 1990 for the success of their computers. He added that this kind of soak advertising in all areas of the media would continue this year.

Dealers are more than pleased with the sales of the ST. Andy Leaning, a spokesman for major ST



■ Look familiar? Of course it does – there are now two and a half million of these STs in the world, with half a million in Britain alone

retailers Silica, told *ST FORMAT* that the ST's standing in the marketplace had improved over the year. Silica have started shipping the first batch of TTs available in this country, he said, and he pledged Silica's support for the Mega STE when it becomes available here.

A spokesman for Evesham Micros corroborated Silica's views. He claimed that sales of STs were "absolutely brilliant" and reckoned that over the year, sales had risen dramatically. What's more, he said, this was over the whole range of Atari computers, not just with the Discovery packs.

ST FORMAT Comment

Atari's claimed sales figures bear out what we've all known for a long time, namely that the ST is a superb machine which appeals to a wide variety of computer en-

thusiasts. Its main strength has proved to be its flexibility in dealing with a broad range of different tasks. Now there's just one more obstacle to be negotiated before the ST rules supreme in the 16-bit market – Atari's public image.

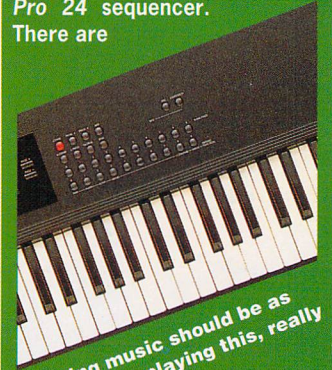
There are two and a half million reasons why Atari should be making an effort to please its public – after all, if you get



■ The mould-breaking Mega STE: can it match the ST's popularity?

The MIDI Faker

The trouble with producing music via a sequencer is that the end result usually has more to do with how well you understood the manual than how competent a musician you are. "Hands On" MIDI Software hope to remedy that problem with some interactive MIDI software for use with the Steinberg Pro 24 sequencer. There are



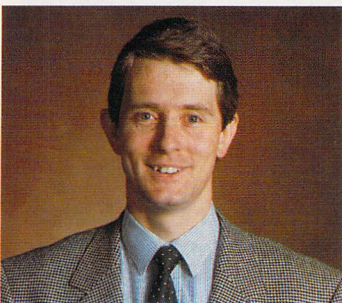
■ Making music should be as easy as – er, playing this, really

two programs, *Gig and Masterclass*, available now. These include sequenced covers of some famous songs, re-created by MIDI professionals. Songs such as *BAD* by Michael Jackson, *Ride on Time* by Black Box and *Toccatta and Fugue* by MC Bach illustrate how to program a song. You can now purchase four chart hits or two classical pieces for £19.95.

■ "Hands On" MIDI Software Ltd, 14 Lodge Road, Bedhampton, Havant, Hants PO9 3LL or ☎ 0705 452628.

treated badly by a company, do you return to them again? Up till now, however, Atari have chosen to ignore their mistakes rather than tackle them – even though the solutions would cost them very little time, effort or money.

When the Mega STE is launched in this country, Atari will be offering a range of computers which are second to none. It's to be hoped that they will manage to improve their public image, which is currently second to everyone.



■ Good news for Peter Staddon, Atari UK Marketing Manager

GET THE PICTURE WITH THIS LITTLE RIPPER

Imagine a cartridge which could break into any program and enable you to monkey around with the graphics, sound and code. Sounds like another pirating cartridge, doesn't it? Well, almost.

The Ultimate Ripper cartridge can do everything but save a program to disk. The unit, which plugs into the ST's cartridge port, has just one switch – on and off. Flick the

switch, press Reset and you gain access to a main menu. From here you can freeze the program you're running and save graphics, sprites and fonts to disk – or even search out music, either sampled or internally-generated, and save it to disk. Code can be viewed in a memory editor and disks examined.

The French producers of the cartridge claim that rather than encouraging piracy it

will be an incentive to produce your own software, since it demonstrates the internal workings of a program.

We are currently testing Ultimate Ripper – watch for the full *FORMAT* review soon. If you want one in the meantime, it's £44.95, from MPH Software. MPH's other product – the stereo sound cartridge – is available now for £24.99. MPH are on ☎ 0603 503382.

NET £25 OF SOFTWARE – FREE! SEE PAGE 136

WORLD EXCLUSIVE

by
Andrew
Hutchinson

populous revisited



■ Bullfrog Peter Molyneux, the main man behind *Powermonger*, *Populous* – and now the sequel

Bullfrog, the programming team behind *Populous*, are currently working on the follow-up, *ST FORMAT* can exclusively reveal. *Populous* was the biggest selling game of 1989 and one of the top five 16-bit titles ever, selling 46,000 copies on the ST, so news of a follow-up is bound to create considerable interest.

Populous 2 will feature completely new code and is expected sometime in September. Peter Molyneux, the head programmer at

Bullfrog, said, "It's still very early in development, but I can't wait to play it. We're using our cleverest routines yet, but we're concentrating on gameplay – honing it into the ultimate game." He added that the displays are now working four times more quickly than those in the original but with ten times the depth.

A brand new divine being has been introduced into the gameplay, namely – and we've been trying to work this one out – an atheist. The three deities in *Populous 2* will have 30 divine effects to choose from:

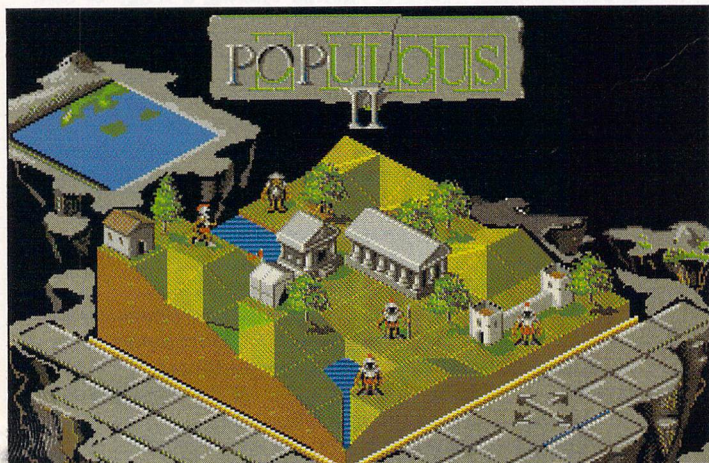
- Swamps
- Volcanoes with fiery boulders and lava streams
- Earthquakes where the land cracks open and people and houses fall in
- Tornadoes
- Tidal Waves
- Lightning bolts
- Plagues
- Pestilence
- A religious kamikaze maniac

"We're concentrating on gameplay, honing it into the ultimate game"
– Peter Molyneux

- Armageddon
- Druid Priests
- Paladins
- Parting seas
- Fireballs.

Populous 2 is actually being developed on an ST, and the Bullfrogs

have chosen to use a completely new display routine in the program, along with some ideas they picked up while creating the acclaimed



■ An exclusive sneak preview of *Populous 2*, the follow-up to one of the best-selling games of all time. Remember, you saw it here first!

A MIDI EDUCATION

Germany's C-Lab have released three new programs for the ST, aimed at an educational market. C-Lab are producers of the massively popular *Notator* sequencing software favoured by most professionals.

Notator Alpha is a cut-down version of the £499 *Notator*. The program has been designed with an educational environment in mind,

but it would serve equally well as a cheap, high quality sequencer for someone who isn't very experienced with MIDI. It costs £199.

If you are thoroughly confused by MIDI and don't know your quantization from your transposer, then you might find *MIDIA* useful. The program operates as a normal sequencer, but it also explains everything as you go along. If you change the velocity of a note, for example, a graphical and a textual explanation appear on-screen. *MIDIA* will set you back £65.

In these days of high technology it's all too easy to forget that you are actually making music. *AURA* is a program which teaches you all you need to know about chords, scales, intervals and melodies. A series of lessons leads you through the subject, keeping tally of how many mistakes you make. Plug in a synth and as well as seeing the notes on screen, you can hear them. *AURA* costs £99.

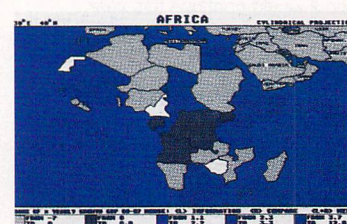
■ With *AURA*, *MIDIA* and *Alpha Notator*, you can train yourself in making music with MIDI – and brush up on the basics

■ *AURA*, *Notator*, *Alpha* and *MIDIA* are available from Sound Technology ☎ 0462 480000.

Powermonger. The game will include over 200 different animations, compared to *Populous*'s 20. The landscape will also be fully animated with terrain-sensitive land blocks. What's more, buildings and cities will literally grow, rather than just transform into another type as they did in the original *Populous*.

Electronic Arts distributed *Populous* and will be handling the follow-up. There have been rumours in the games industry that Bullfrog will be joining Renegade or setting up their own marketing arm in the future, but Electronic Arts are quick to deny this. Their PR Coordinator, Sarah Shrapnell, told *FORMAT* that the Bullfrogs were tied under contract to produce *Populous 2* for EA. She added, however, that the game is not expected before the autumn.

Do you have any ST news for us? Write to Andrew Hutchinson, News Editor, *ST FORMAT*, 30 Monmouth Street, Bath BA1 2BW – or if you have access to the CompuServe network, leave a message for *ST FORMAT*, User ID 100012,2571. Leads can be treated in strictest confidence if you wish.



■ Not just maps, but statistical databases for all countries

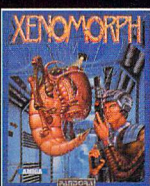
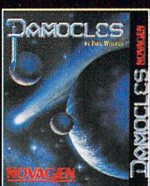
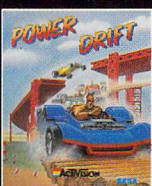
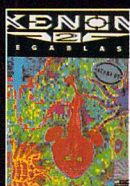
It's Jografy Innit

Geography is one of those subjects which is most interesting when you're stood on a glacial moraine in Wales and least interesting when you're sat in a classroom. Therefore any way of boosting interest in the subject is bound to bring a smile to any haggard Geography teachers who can gain access to an ST, not to mention their poor old students.

Geography Tutor is an educational atlas program which includes maps and information on every country in the world. By clicking on a country you can access information concerning the main religions or the National Debt, for example. Frustrated geography students can obtain the program, which costs £29.99, from Gralin International, 11 Shillito Road, Parkstone, Poole, Dorset, BH12 2BN.

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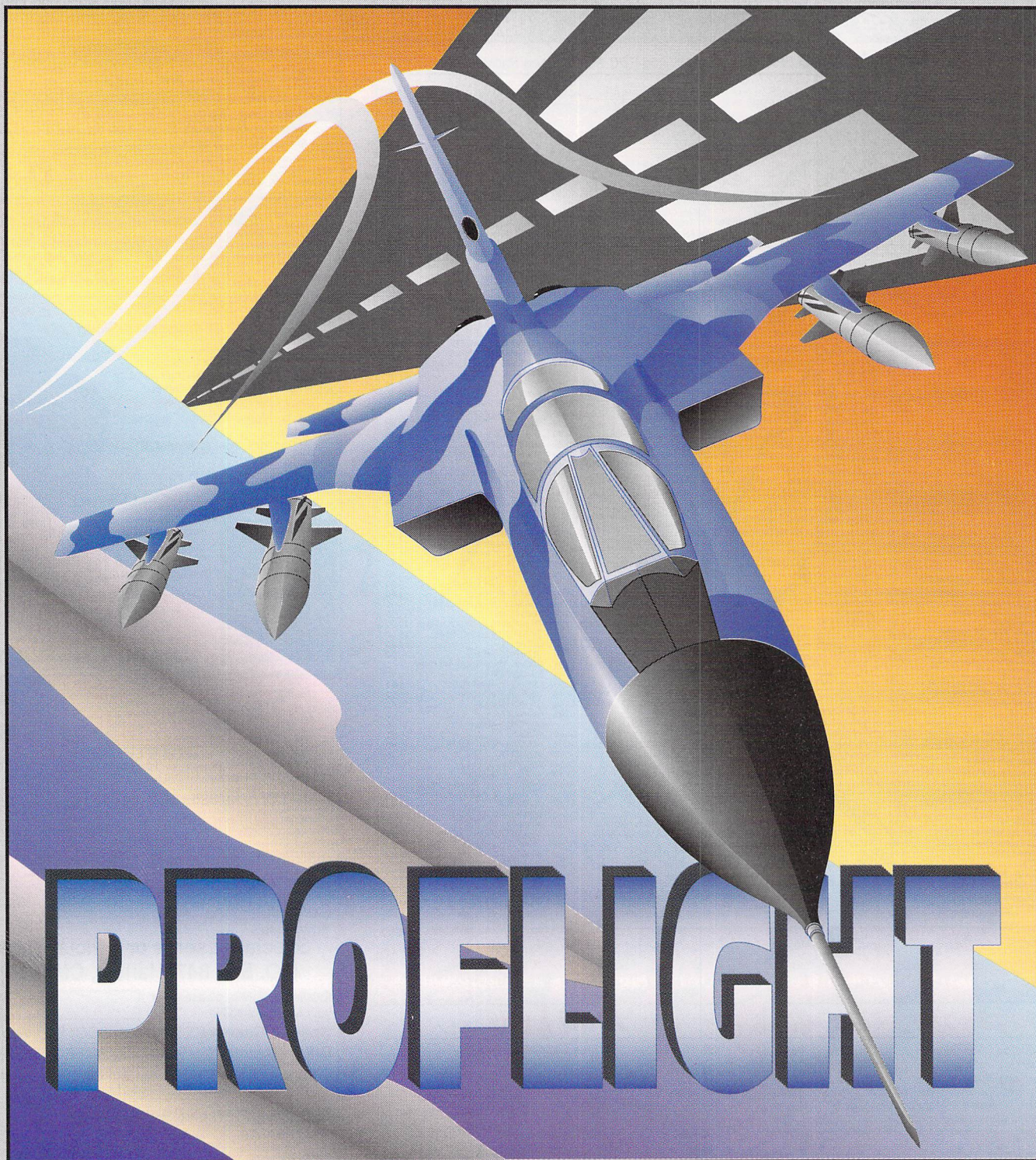
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DRUM FUN



■ Time was, a drummer had to lug around these whopping great round things, you know – but now it's all in this neat little unit

Anyone who uses an ST for MIDI applications knows how useful a dedicated drum machine is. These pieces of hardware enable you to build up complex drum rhythms from very high quality samples.

Alesis have released a new drum machine, called the SR-16, which retails for £299. The machine enables you to access 150 samples and 200 drum patterns. Something called "Dynamic Articulation" has been incorporated into the samples, which means that as you play the sample more loudly its timbral qualities change.

If you fancy getting your hands on some velocity sensitive drum buttons then give Sound Technology a bell on ☎ 0462 480000.

16-BIT COMPUTER FAIR

The ST was a very obvious force at the 16-Bit Computer Fair which took place on the 4th, 5th and 6th of January at the Novotel, Hammersmith, in London.

The main exhibitors were hardware or distribution companies; as in previous years, though there were plenty of games in sight, the games houses themselves stayed away. New products were being shown on many of the stands. Among the most interesting companies present were American outfits such as Double Click Software and Soft-Logik.

Double Click were selling their brand new DC Desktop, the only serious rival to Neodesk 3, which comes from their fellow American software house, Gribnif. DC

Desktop includes advanced features such as the ability to place file icons straight onto the Desktop. Also on the stand was the revised version of DC Utilities. This utility disk includes programs for compaction and extraction, as well as a RAMdisk and a freeze frame facility.

MPH Software, who were doing brisk business with TCB Tracker, were also showing their brand new stereo sound cartridge for the ST. The unit, which retails for £24.99, is available now. It enables a standard ST to play stereo music, while at the same time speeding up the processor. MPH ☎ 0603 503382.

Hisoft, who are keen supporters of the ST, announced a bevy of new releases. They are phasing out Hisoft Basic and Power Basic and releasing one all-encompassing interpreter called Hisoft Basic 2.

The new BASIC is set for release soon. It features a resource construction set, a multi-window editor and dialog boxes. Devpac 3 – the most popular assembly language available for the ST – is on its way from the same company. Hisoft ☎ 0525 718181.



■ Not quite as busy as Piccadilly Circus, but then Eros doesn't carry all this ST software

Power Failure Saviour

by Vic Lennard

It's the stuff nightmares are made of. You're busy working on your ST when without warning the lights dim and the screen disappears. Everything's gone! Anything you've entered since your last save is no more, and if you happen to be saving to disk at that moment the result could be a catastrophe, with the entire disk ruined – or worse, an all time high-score lost.

This kind of disaster can be prevented with a device called an Uninterruptible Power Supply (UPS). The unit, which sits between your mains socket and ST, contains a mains filter, a heavy-duty lead acid battery and a charger. The battery is continuously charged while the unit is on, and if the voltage dips below a preset level the battery kicks in and takes over the supply of your 240 volts instead of the mains.

These units used to cost as much as £500, but now a company called Emerson Electric have released a UPS which costs a quar-

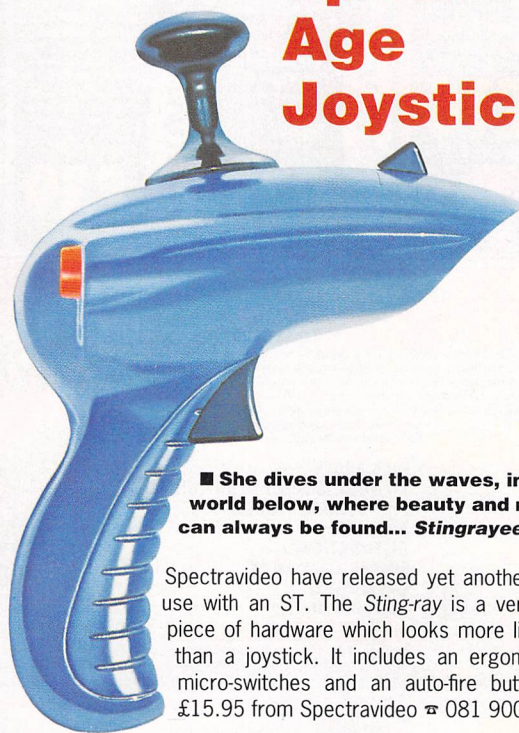


■ The lights may have gone off all over Europe, but with this you can still complete that high score or save that document

ter of that. The Accupower UPS unit can supply electricity to your ST, a monitor and a hard drive for between eight and ten minutes after a loss in power. A 90-watt model costs £153, or, if you've got a lot of hardware to keep running, a 480 watt model will set you back £511.

■ Accupower UPS units are available from Emerson Electric Company ☎ 0793 524121.

Space Age Joystick



■ She dives under the waves, into the world below, where beauty and mystery, can always be found... *Stingrayee Stingray*

Spectravideo have released yet another joystick for use with an ST. The *Sting-ray* is a very cyber-punk piece of hardware which looks more like a ray gun than a joystick. It includes an ergonomic handle, micro-switches and an auto-fire button. It costs £15.95 from Spectravideo ☎ 081 900 0024.

THERE'S MORE ST NEWS ON PAGE 15...



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ST charts

What's hot,
what's not.
What's in, what's
out and what's
Turtles doing at
number one?

ST CHART CHAT

Well, it had to happen. *F19* takes a negative six G dive down to number seven after a prolonged high altitude flight at number one. It's replaced by those awful *Turtles* – don't you lot read the reviews?

It's nice to see some fresh faces up there. The bodacious *Powermonger* proves that quality does count sometimes, while the Bitmaps lap it up at number three with the storming *Speedball 2*. All these sequels, I don't know.

Pang drops in at a lowly 24, which is a shame – it's a wicked game. Surprise of the month is definitely the re-entry of *Rainbow Islands* at number 33: a lot of people obviously realised what they were missing out on.

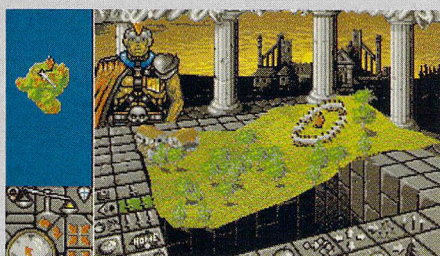
Ocean, Mirrorsoft and Codemasters remain the dominant forces behind the games, although Virgin and Gremlin Graphics could be contenders next month. Will *Turtle*-mania have subsided by then?

CHARTBUSTERS

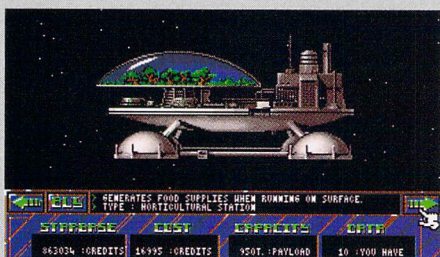
Are you feeling psychic, punk? If so, we'd like to hear from you. Have a look at this month's chart and see if you can predict what the top three could be next month. Get it right and win a game of your choice from the top ten.

Send your three predictions on a postcard to: Chartbusters, ST FORMAT, 30 Monmouth Street, Bath BA1 2BW, indicating which month you're predicting for. Don't forget to name the game you'd like to have if you win.

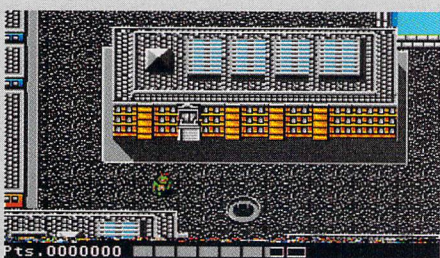
■ Main chart: STF refers to issue and score of review in ST FORMAT. These full price and budget ST charts are compiled and supplied by Gallup.
© European Leisure Software Publishers Association Ltd 1991



■ *Powermonger*, the *FORMAT* Gold winner from Electronic Arts and one of our Ed's favourites, goes straight in at number two



■ Down from number eight, *Supremacy* is still going strong at number nine



■ Oh my gawd, they're in at number one! Looks as though *Turtles* are here to stay

ST BUDGET TOP TEN

1. **NE** Fantasy World Dizzy
Codemasters
2. ▼ Treasure Island Dizzy
Codemasters
3. **NE** Batman Caped Crusader
Hit Squad
4. **NE** Fast Food
Codemasters
5. ▼ Advanced Fruit Machine
Codemasters
6. **NE** After Burner
Hit Squad
7. **NE** Silkworm
Mastertronic
8. **NE** Hong Kong Phooey
Hitech Software
9. ▼ Italia 1990
Codemasters
10. **NE** Super Hang On
Hit Squad

*13, *Hollywood Collection*: not reviewed, but Ed – played it, eaten it – Higham reckons it's pretty good value for dosh, hence the rating
**14, *Steve Davis Snooker*: again not reviewed – in fact, nobody around here even remembers seeing it. Who on earth is buying it?

1. **NE** **TEENAGE MUTANT HERO TURTLES**
Mirrorsoft £24.99 – STF 19: 38%
2. **NE** **POWERMONGER**
Electronic Arts £29.99 – STF 19: 93%
3. **NE** **SPEEDBALL 2**
Mirrorsoft £24.99 – STF 18: 88%
4. ◀▶ **KICK OFF 2**
Anco £24.99 – STF 14: 92%
5. ▲ **GOLDEN AXE**
Virgin £24.99 – STF 18: 82%
6. **NE** **ROBOCOP 2**
Ocean £24.99 – STF 19: 84%
7. ▼ **F19 STEALTH FIGHTER**
Microprose £29.99 – STF 12: 96%
8. ▼ **LOTUS TURBO CHALLENGE**
Gremlin Graphics £24.99 – STF 18: 86%
9. ▼ **SUPREMACY**
Virgin £29.99 – STF 18: 90%
10. **NE** **TOURNAMENT GOLF**
Elite £24.99 – STF 20: 73%
11. ▼ **POWER PACK**
Beau Jolly £24.99 – STF 17: 88%
12. **NE** **TOYOTA CELICA RALLY**
Gremlin Graphics £24.99 – STF 18: 79%
13. ▲ **HOLLYWOOD COLLECTION**
Ocean £24.99 – STF: 76% *
14. **NE** **STEVE DAVIS WORLD SNOOKER**
CDS £19.99 **
15. ▲ **CORPORATION**
Core Design £24.99 – STF 18: 87%
16. ▲ **WHEELS OF FIRE**
Domark £29.99 – STF 19: 69%
17. ▲ **BACK TO THE FUTURE 2**
Mirrorsoft £24.99 – STF 14: 62%
18. ▼ **CAPTIVE**
Mindscape £24.99 – STF 16: 93%
19. ▼ **SHADOW WARRIORS**
Ocean £24.99 – STF 18: 58%
20. ▼ **SUPER OFF ROAD**
Virgin £24.99 – STF 19: 68%
21. ▼ **M1 Tank Platoon**
Microprose
22. **NE** **Sly Spy**
Ocean
23. ▲ **World Cup Soccer '90**
Virgin
24. **NE** **Pang**
Ocean
25. ▼ **Shadow of the Beast**
Psygnosis
26. ▼ **Saint Dragon**
Storm
27. ▼ **Soccer Mania**
Addictive
28. **NE** **Total Recall**
Ocean
29. ▼ **Turrican**
Rainbow Arts
30. ▼ **International Soccer Challenge**
Microstyle
Elite
31. ▼ **Gremlins 2**
Elite
32. **NE** **Special Criminal Investigations**
Ocean
33. **RE** **Rainbow Islands**
Ocean
34. **NE** **Multi Player Soccer Manager**
D&A Games
35. **RE** **Cadaver**
Mirrorsoft
36. **NE** **Platinum**
US Gold
37. **NE** **Gazza 2**
Empire
38. ▼ **Cricket Captain**
D&H Games
39. ▼ **Lost Patrol**
Ocean
40. ▼ **Team Yankee**
Empire



protar products include the fastest hard drives available for the Atari ST. The fully compatible auto-bootable hard-disks are mounted in an elegant housing which is perfectly at home with the ST design. They are supplied completely ready for operation – no hidden preliminaries.

The system software supplied provides access to such features as 12 partitions per disk, selectable boot partition, write protection and password, all of which are fully compatible with the numerous operating systems and emulators which are offered for the ST.

protars' 40 DC, 80 DC and 160 DC models are additionally equipped with a 64 kB cache memory integrated on the hard disk; this cache memory reduces disk accessing times by up to 50%.

Some other examples of protars' hardware include:

- the R44 removable disk drives
- the T60 and T150 tape streamers

- ProScreen TT – a large scale monitor for the Atari TT

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We are currently renaming our hard disk series for copyright reasons. Also, we are putting the final touches to our new U.K. subsidiary. Until further notice our products are available to you without delay, direct from Germany at absolutely no extra cost. Definitely worth checking out!

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protar

**– a safe option
for the future.**

Atari's very survival depended on the ST's strong position in Europe, Atari US General Manager Greg Pratt revealed to *FORMAT* at January's Consumer Electronics Show in Las Vegas.

"As a home office alternative we offer a very strong product," he says, but Atari is better known in the US for such hardware as its hand-held Lynx games machine. In Britain and Europe, the ST is recognised as the versatile all-round machine it is, but it is still perceived in a different light in the States. Consequently, the ST's fortunes – and those of Atari itself – have been less secure in its home country than in Britain.

"We have certain areas where we do very well with the machine," Greg says, "the music industry and various areas of desktop publishing, for example. We will continue to push very much in those areas," he insists, but what of others?

"More and more we're seeing the benefit of our strong European presence by virtue of software developers transferring their products here," Greg says. "We in the States are prepared to do whatever we can to assist European software, whether we publish it ourselves or direct it to other publishers. We would welcome any of the strong software packages here in the US and we are very happy that we have a strong market in Europe, because otherwise we wouldn't get the software."

"We have had a fairly tough time here in attracting and retaining the best software developers, but I think that's now beginning to change. We've got new people on board, we've got new machines that are



■ Greg Pratt, boss of Atari US, spoke frankly to *FORMAT* at CES

very exciting, and I think we're now starting to swing the pendulum in the other direction. But, you know, we were only able to survive because of our strength in Europe.

"It's all a matter of the size of the installed base. The larger the base, the easier it is. Obviously the United States has been lagging behind. I think that as we go forward with the newer machines – the new 1040 STE, the Mega STE – we'll start to reverse that trend."

Greg dismisses any suggestion of a threat from the new, low-cost Macintoshes in the home-productivity market. "We think that anyone who takes the time to compare that machine and ours will consider the Atari to come out ahead."

Greg constantly refers to a renaissance in the fortunes of the ST Stateside, and he's determined that Atari won't repeat its much criticised practice of announcing products long before they appear – though he suggests that it's not always been the company's fault.

"You have to bring the products to market as quickly as you can," he

Atari would have sunk without Europe, General Manager says

by
John
Minson

claims. "I think that the industry seems to find out things and that's unfortunate. I certainly think you're right that one should only announce when one is prepared to deliver."

With this in mind he won't succumb to queries about forthcoming products, such as the eagerly anticipated portable STs. "We're not saying anything until we're ready to come forward with something new." And when might that be? "I won't say until it's ready," he chuckles.

There was a strong showing of CD-ROM programs at CES, but Greg is similarly unforthcoming about CD software for the ST. "Obviously it is something that we are still interested

in," he says. "The interface is ready – it has been ready for a long time. There are existing products on the market that can interface with the Atari, so from a software development point of view there's no reason for anyone to wait. You'd merely buy the interface and get going immediately."

However, there's little reason for anyone to develop CD software without Atari's mass-market support, and

there seems to be no immediate prospect of this. "In terms of Atari producing something," Greg says, "I am at this point not aware of anything. And it's the same old reason – we feel prices are too high, so therefore we're not coming forward yet."

There is, however, one thing that Greg is only too happy to confirm about future plans. After projecting a somewhat distant image in past years, is Atari changing its attitude? "Without a doubt," he grins.

He consigns to history the initial hiccups Atari had with the STE. "There's no need to rehash that now," he says. "What is important is what we will do in going forward."

With the Mega STE we talked about it and we're shipping it in Europe now. Within six weeks of showing the machine in November at the Comdex show [see the full show report in *ST FORMAT* last issue], we were shipping it out. I think this is precisely the type of thing we need to do. We're exactly on the right foot and I can't apologise for yesterday, I can only work to improve tomorrow." **stf**

"We were only able to survive because of our strength in Europe"

"I can't apologise for yesterday, I can only work to improve tomorrow"

PLAYING GAMES IN LAS VEGAS: CES PREVIEWS NEW RELEASES

The CES show featured a host of new games. With Atari positioned more for serious applications than games in the States, many leisure publishers leave decisions regarding ST conversions to their UK representatives. However, these new titles previewed at the CES should be appearing here, though in most cases not until the autumn.

Konami's new deal with Mirrorsoft should see an ST version of Bill Elliott's *NASCAR Challenge*, the only stock car game to receive NASCAR endorsement. Lucasfilm's simulation of air warfare

from 1943 to 1945, *Secret Weapons Of The Luftwaffe*, is due in September, and the same company's much-praised animated adventure *Monkey Island* is also on the way, courtesy of US Gold.

Interplay, distributed by Electronic Arts, hope to convert the innovative *Castles*, an adventure game based on medieval architecture, government and military skills. Brøderbund showed *The Ancient Art Of War In The Skies* – a thoroughly researched, strategic simulation of WW One aviation. Accolade's *HoverForce* is described as

"Top Gun meets *Blade Runner*," a shoot-'em-up set in a huge city, promising fast vector graphics.

Spectrum Holobyte's *Falcon 3.0* may prove too large to convert to floppy disk systems, but *Sphere Of Influence* should appear – a world simulator with economic and ecological goals played over 25 years. SSI fans can enjoy two new adventures: *Eye Of The Beholder*, which uses AD&D's Second Edition rules, and *Death Knights Of Krynn*, in which you can use not only characters but also their belongings from previous games.



■ If you enjoy visiting the ruins today, just wait till you can fortify your own in *Castles*



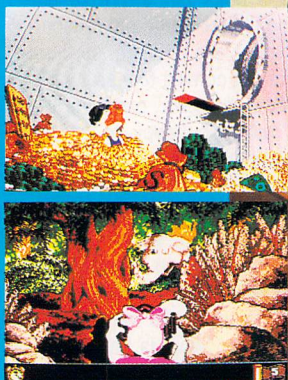
■ Misleadingly named by comparison, *The* (not-quite-so) *Ancient Art Of War In The Skies*



■ Very impressive graphics make *Secret Weapons Of The Luftwaffe* look promising

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previews

This month, Andy Hutchinson chucks out the inaccurate scrying glass, pours the mouldering tea leaves down the sink and tries the I CHING in an attempt to divine just what the future holds for the latest games

HEROQUEST

Gremlin

This one started out as a board game. Apparently *HeroQuest* the fantasy board game was the bestselling new game of 1989, which doesn't mean a hell of a lot if you think about it. The idea of the game is to explore a series of underground rooms, tunnels, chambers, ante-rooms, larders and little cupboards under stairs.

You get to choose one character from either Wizard, Elf, Barbarian or Dwarf (those characters sound familiar) and attempt to become a "Hero." The game's due for release at the beginning of April.



■ The ST version of *HeroQuest*, the best-selling fantasy board game, is due in April

COHORT – FIGHTING FOR ROME

Impressions

Scheduled for release by the time you read this, *Cohort* is the follow-up to the popular *Rorke's Drift*. It uses the same strategy table-top viewpoint as its predecessor but places you in charge of your very own Roman army. Your ultimate aim is to become Emperor, but you have to beat all the other generals if world domination is your aim.



FEUDAL LORDS

Impressions

Having decided that they're not very good at writing shoot-'em-ups, Impressions have gone for a strategy game for their latest release. It's set in the Dark Ages, you control a lord and must build up your personal wealth. To do this you attack and pillage other villages and then tax them to the hilt.

Up to four people can play at once. Thus you and three mates can mount an offensive in

rural England. The battle sequences (it says here) boast "a new interactive method," which probably means you get to play soldiers...



■ Can poor old Malcolm make it as a *Feudal Lord* without a trace of charisma?

'NAM 1965-1975

Domark

Nope, not a funny round piece of sweet bread served up in the local Indian, but a simulation of the Vietnam War. Matthew Stibbe, author of *Imperium*, is the talent behind this strategy game. You take on the role of Mr President himself, and in order to win the game you have to prevent South Vietnam falling into the hands of the "Communist" North.

Within the game there are some stand alone scenarios you can play on their own. You can re-live, say, that not very glorious bloodbath the Tet Offensive, or the farcical Khe Sanh Siege. War-mongering wannabe Presidents can buy 'Nam as you read this.



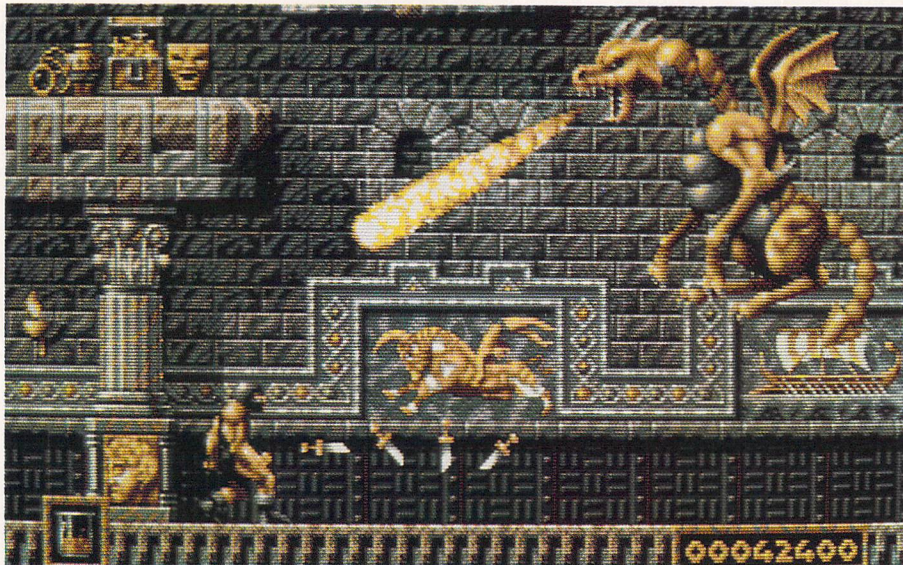
■ Waal, Mr President, it's lahk this. At this moment in tahn we have a plausible-deniability credibility gap situation scenario in place. Translation: they'll never believe this one, even if it is just a simulation

MIDWINTER 2: FLAMES OF FREEDOM

Microprose

The original *MidWinter* was one of those games which sucked you in and wouldn't let go until your bladder went on strike. The follow-up looks to have equally wicked gameplay, exemplary graphics and tasty plot. The idea is to liberate a series of islands. Helping you do the island hopping are 20 vehicles, from jet-skis to zeppelins.

Flames of Freedom looks like being one of the big games of 1991. After *FORMAT*'s in-depth preview in issue 18, you can read the full review – over three pages of it – next issue!



■ **Gods**, due for release soon, is a platform and puzzle game by the Bitmap Brothers, now working for Renegade software. This early version looked extremely promising with nifty gameplay elements including intelligent aliens. Another innovation: the game itself knows when you're not doing so well and adjusts the difficulty level accordingly

GODS

Renegade

➤ **Andy Hutchinson has an exclusive talk with the Bitmap Brothers about their new exploration into divinity**

The Bitmap Brothers, those demon programmers, don't hang about for very long. No sooner has their ever so wicked *Speedball 2* hit the shops than they reveal their next title. The Bitmaps started working on *Gods* in December 1989 and it's now nearing completion.

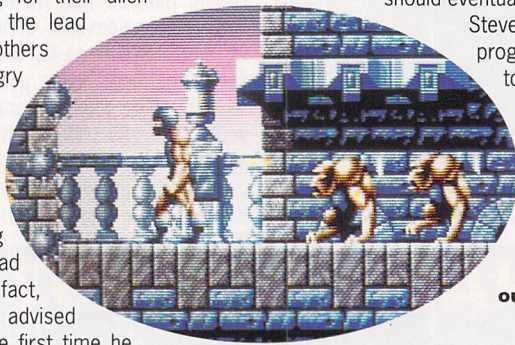
Gods is an eight-way-scrolling platform and puzzle game, based on Greek mythology. The Brothers decided early on to bring a fresh approach to this most jaded of formats. Eric Matthews, one of the team, is keen to release a platform game: "We'd never done an eight-way scroller," he says. "We wanted to get away from mindless aliens flying on screen."

So why is *Gods* so different to other platform games? "We've combined strategy and wargaming elements in an arcade environment

and created an identity for the aliens in the game," says Eric. The aliens, he explains, don't weigh in with the usual amoeba-like intelligence but are very cunning. They possess artificial intelligence and might, for example, dodge your bullets. The Bitmaps are also thinking of including a morale rating for their alien attack waves so if the lead alien gets shot, the others may either get angry or simply run away.

One of the cutest computer-controlled characters is the thief, who enjoys stealing treasure. He isn't bad news, though – in fact, you'd be strongly advised not to shoot him the first time he appears on-screen.

The gameplay area in *Gods* is massive: 48 x 50 screens for each of the four levels. To complete a level you need to get hold of some keys, hidden in rooms you can only reach by solving puzzles. Eric reveals that you don't need



■ **Knuckle Draggers Anonymous** ought to have a chat with these chaps



■ **Eric Matthews of the Bitmap Brothers**, programmers of *Speedball 2*, the **FORMAT** Gold winning *Xenon 2* and now *Gods*

to solve all the puzzles to complete a level – there's more than one way to get to the final door. However, if you do choose to do things the hard way, you're rewarded with loads of treasure. You can only carry up to three items at a time, though.

Shoot an alien and you're rewarded with a crystal. Collect all of them and you can spend loads of lolly in the shop, in the middle and at the end of every level. There are 15 different weapons to choose from, ranging from axes and knives to magical potions.

"We've combined strategy and wargaming elements in an arcade environment"

– Eric Matthews

Reach the end of a level and you encounter a particularly vicious monster. This chap needs a lot more than two direct hits to deal with, but if you've collected all the weapons en route you should eventually kill him.

Steve Tall, a big ST fan, programmed *Gods*. He told *FORMAT* he far preferred working on an ST because the processor is quicker than any of

SOUND SONIX

The sound in a Bitmap Brothers game is always excellent. *Gods* is no different. Since Renegade have amalgamated with Rhythm King records, there are going to be some big names producing the music for the game.

Nation 12 – whose members are John Fox (ex Ultravox), Simon Rogers (of The Fall and Ez-ee Possee), DJ Streets Ahead, Shem (of Beats International) and Tim Simmons (of Bomb the Bass) – have written a song called *Into the Wonderful*. This not only features in the game but is planned for release on vinyl by Rhythm King records. Eric Matthews of the Bitmap Brothers also revealed that the *Speedball 2* music might be finding its way onto a 12 inch extended remix at some point.



■ **Sainsbury's it ain't.** This shop stocks knives, axes, potions and such weird additions as familiars which watch your back



■ **Leaping into nowhere** is never very advisable, but that stash of treasure is too good an opportunity to pass up

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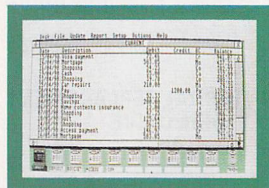
PFM PLUS makes full use of ST's Gem interface, if you need to amend or update an entry or Standing order simply click on it. Your screen looks just like a bank statement!

STANDING ORDERS & DIRECT DEBITS EATEN ALIVE

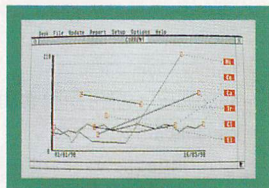
PFM PLUS handles Credit and Debit - Weekly, 4 Weekly Monthly, Quarterly, Yearly and even complicated regular payments like 12 payments of £52.99 followed by one of £12.50, PFM will check the date and automatically insert standing orders as they become due.

BUDGET WITH EASE, AT A CLICK OF A MOUSE.

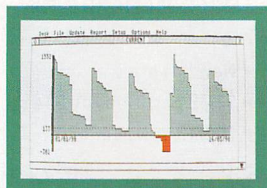
If you're the type that likes to look ahead then PFM allows you to set budgets for both expenditure and income. Up to 28 budgets can be set over a year, a quarter or a month and then displayed either in figures or as a bar graph for a given period. Income/Expenditure for these budgets can also be shown as a pie chart so you can tell at a glance where your money's gone. PFM also allows you to display or print your budget groups selectively so you can see your expenditure quickly and easily.



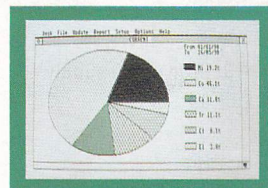
MAIN ACCOUNT SCREEN



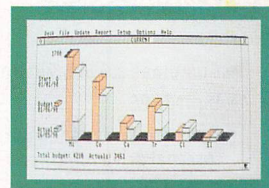
TREND GRAPH



BALANCE PLOT GRAPH



BUDGET PIE CHART



BUDGET COMPARISON
BAR GRAPH

PERSONAL FINANCE PROGRAM BY PETER VEALE

Based on the original highly successful Personal Finance Manager, PFM Plus from Michtron is packed with additional features, improvements and enhancements all designed to give you better control over your money. Take a look at this comprehensive specification.

Multiple Accounts

Each file can hold up to ten accounts, each with its own entries and standing orders. Automatic posting of entries between accounts is under full control of the user.

Automatic Standing Orders

Standing orders can be set up for each separate account. Start and end dates can be specified, with payment periods of weekly, 4 weekly, monthly, quarterly, 6 monthly, yearly, or just a single payment.

Entry Posting

Transactions made on one account can be automatically 'posted' to a second account. PFM Plus displays full details of entry sources and destinations. This feature also applies to standing orders.

Selectable Columns

Up to eight different fields available for account displays. The choice of columns and the order in which they appear can be set by the user. A separate choice is available for statement printouts.

Multiple Views

Up to 5 views of any one window can be displayed at the same time. This allows different parts of the account to be visible through independent scrolling, or copies of graphs to be displayed covering different time periods. A total of 67 windows are defined.

Account Files

Each file contains accounts and standing order entries, budget details and full information on the sizes and positions of all account windows

GEM

Full GEM interface operating in medium resolution colour and high resolution monochrome.

Auto Balance

Automatic account balancing against statement. Facility to continue search for further balance matches.

Upgrading from PFM

PFM Plus includes a utility to convert original PFM files to the new format, so you need not lose valuable data by upgrading

Printouts

On-screen displays and printouts for budget comparison tables and account summaries, in addition to the normal statement and standing order printouts.

Printer Formatting

Extensive control over the format of printing statements allowing alternative character pitches, bold underlined and italics printing. Printer control codes defined in separate configuration file.

User Options

Many configuration options can be controlled by the user. Examples include entry defaults, display column order, initial path and data file names. All options including desktop icon positions may be saved to disk.

Desktop

PFM Plus uses its own desktop from which accounts may be selected. The desktop also includes an analog clock and a four function calculator. The calculator can be used even if it is not in the top window. Desktop icons can be re-arranged as required.

Graphs

Four different types of graph plot are available. A balance plot, a pie chart showing selected budget categories, a budget comparison bar chart and a trend graph. The trend graph can be used to show long term increases or decreases in your bills. All graphs auto-scale to fit window size.

Search

Account search facility using search mask with wildcards

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Most mouse and menu operations can also be selected by a key stroke.

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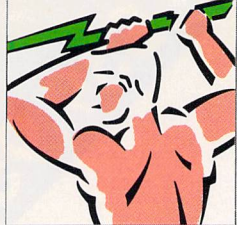
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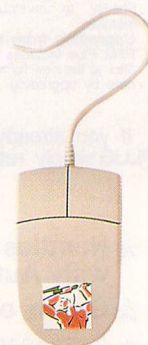
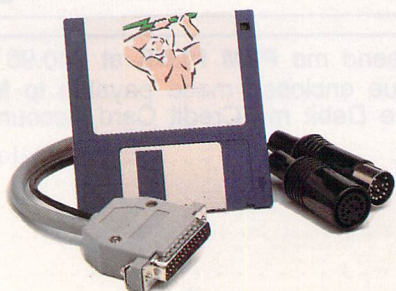
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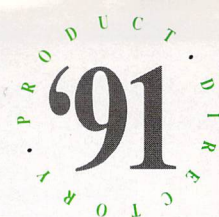
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COMPUTING



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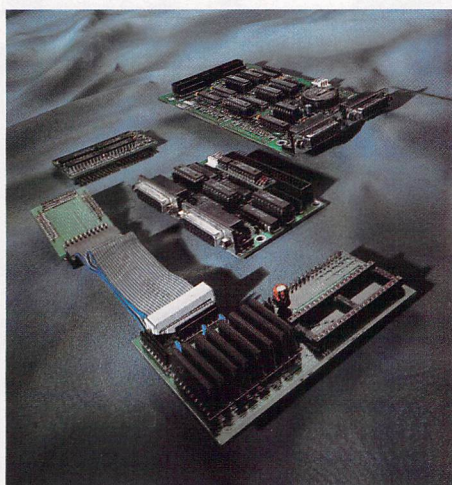
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DMA PORT

DMA stands for Direct Memory Access, and this port enables your ST to talk to complex, memory-hungry peripherals such as **hard drives** and **laser printers**. Hard drives are capable of storing massive amounts of data at very high speeds. They're useful if you're dealing with many files and programs at a time and essential if you want to hold mammoth graphics files or huge music samples. Some samplers exploit the speed of the hard drive and can even sample music directly onto hard disk.

Laser printers are capable of producing extremely high quality output, which makes them perfect for producing professional-looking letters and reports, and ideal for desktop publishing. A laser printer must have access to huge amounts of memory because it "draws" each letter and graphic object on the page in memory before copying it out to paper. Many hard drives come with a through port, enabling you to attach both the hard drive and a laser printer to your ST. See page 27

plug in



FLOPPY DRIVE PORT

Enables you to attach a second, external floppy disk drive. Relying on just the one that comes inside your ST can be a very frustrating experience. Just the simple act of copying files is a tremendous pain in the elbow when there's a zillion disk swaps to carry out. Purchase a second floppy drive and you can kiss those problems goodbye. Data transfer is considerably easier, you can run your program disk in one drive and store data on the other – and, what's more, many games include routines which make the most of a second drive to reduce disk swapping. However, all floppy drives are *not* the same. Some can prove very temperamental with odd disk formats and some don't always recognise a change of disk. See page 25



MODEM PORT

Also known as the RS-232 or serial port. This enables you to connect **serial printers** or **modems** to your ST. Though the result may be the same, a serial printer works in a different way from a parallel printer: it sends data down a single line, one byte at a time, as opposed to eight at a time. The modem is a handy box of tricks through which your ST can chat to other computers, much like Maureen Lipman. It takes your data, changes it into an easily transferable form and squirts it down a telephone line to another modem at the other end, which then decompresses your information for the computer it's attached to. It sounds a complicated process, but modems can transfer data like this at speeds of 2,400 bits (that's 240 characters) a second and beyond. Modem links have been incorporated into games like *Populous* and *Powermonger*, enabling you to play against your friends down the telephone line. See page 31



PRINTER PORT

If your funds don't stretch to a laser printer, then you might look into other **printers**: the **dot matrix**, the **daisy wheel** or the **ink-jet printer**. These devices can come very cheap and usually plug into the normal parallel printer port (though occasionally they can plug into the RS-232 or modem port). **Dot matrix printers** are the most common of the three. They are relatively inexpensive, extremely fast and offer extensive fonts and graphics modes. The drawback: with the usual 9-pin sort you can see that each character is made up of dots. High-definition dot matrix printers use a set of 48 pins but even here the output isn't perfect to the discerning eye. **Daisy wheel printers** produce typewriter quality text using a similar method to the typewriter. Unfortunately, they tend to be relatively slow and cannot handle graphics. You can access extra fonts by changing the daisywheel, but this is a fiddly process. **Ink-jet printers** can produce text and graphics to roughly the same standard as a dot matrix printer but they work by squirting jets of ink at the page so the quality of output can often be much closer to laser printer standard. See page 28



MONITOR PORT

If you've had enough of staring at a fuzzy TV image, you can bung a **monitor** into this socket. Monitors are visual display devices, designed specifically to be plugged into a computer. The images they produce are much clearer and more stable than those on a TV – and using one means you also free up the telly. There's a wide range of monitors available, though not all of them work with the ST. Medium-resolution or colour monitors can directly replace your television set display, producing vivid colours and sharp lines – great for games. Monochrome monitors provide exceptionally high quality output in two colours – ideal for word processing and music, where you need to get very fine detail or watch the screen very closely. Specialist monitors have also become available recently. For DTP work, if you're really power-hungry, you can buy a large portrait monitor or huge A4 page monitors. If you want to be able to switch between high and medium resolutions you can buy a multi-sync monitor, though you need a special adaptor to get it to plug into the ST's monitor port. See page 25

to the power

There comes a time in every ST owner's life when you want to get more from your machine – extra memory, printed output, an improved screen display or simply a faster mouse. Whatever you need, there are heaps of hardware add-ons to boost the power of your machine, and you don't need to be a technical wizard to use them. In this comprehensive guide to peripherals, Andy Hutchinson and Neil Jackson explain how you can use the liberal peppering of ports on your ST to give you real power ➤



MIDI PORTS

MIDI stands for Musical Instrument Digital Interface. No other computer comes with these two ports fitted as standard, which means the ST is the preferred machine of musicians everywhere. Through these ports your ST can talk to electronic musical devices like Synthesizers, sequencers, drum machines and samplers. Load up the appropriate software and you can make beautiful music, the Atari way. See page 31



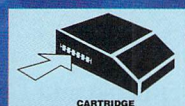
JOYSTICK PORT

Joysticks, used in game playing and flight simulators, are actually sets of simple digital switches – left/right and up/down. The mouse port can also read these, so on an STFM or a Mega ST you've effectively got two joystick ports on the bottom of the keyboard unit. On the STE Atari sensibly moved them from this awkward site to the right side of the machine and added two more, but there are currently few games which support the two extra joystick ports on the STE. See page 28



MOUSE PORT

Your mouse makes it easier to get around the Desktop by enabling you to move the pointer just like a pen on paper. To achieve that smooth movement of the pointer, mice are analogue devices, like thermometers, not just on/off digital devices like switches or joysticks. This means you can plug a second joystick into this port but you can't plug a mouse into the joystick port, even though both ports look identical. See page 28



CARTRIDGE PORT

Chips containing data (computer programs or files) are placed inside a cartridge, which can be plugged into this port. The data can then be accessed at lightning speed. The original idea was that games would be placed on chips, thus reducing the size and access speed of games and making them faster and more creative. However, this idea never took off because of the prohibitive cost of the memory chips. Now it's mainly serious programs (such as Electric's *FaST Basic*) which come in cartridge form. The port can also accept copying devices and handy little utilities like a battery-backed clock.

Are you wasting your valuable time setting your ST's clock?

Frontier's Forget-Me-Clock II is the answer

If you're one of those people who has an auto-run program annoyingly prompting you for the time and date every time you turn on your ST or ST^E or even worse, if you're one of those ST or ST^E users who doesn't set the system clock then Frontier's Forget-Me-Clock II cartridge is the solution you've been hoping for.

Just Plug It In And Go

With the Forget-Me-Clock II plugged into your ST or ST^E's cartridge port the system clock (used by the Control Panel) and keyboard clock will automatically be set at turn on or reset by a small auto-run program supplied with the Forget-Me-Clock II. No longer will you have to waste your time setting your ST's clock. Using the Forget-Me-Clock II also means that files saved on disk are always properly time and date stamped making finding the latest version of a file the simple task of just looking for the file with the latest time and date.

Full Pass Through

Frontier's Forget-Me-Clock II is a clock cartridge unlike any other. All other clock cartridges for the ST will tie up the cartridge port making it impossible to have your ST's system clock set automatically while still using another cartridge. The Forget-Me-Clock II has a full cartridge pass through which means that any other cartridge for the ST can be plugged into it while it is plugged into your ST. The Forget-Me-Clock II remains totally invisible so



Frontier's Forget-Me-Clock II Cartridge With Pass Through

that the other cartridge can be used normally, but it still automatically sets the system and keyboard clocks in your ST.

No Need To Open Your ST

Installing some clock cards for the ST means that you have to open your ST's case and pry computer chips out of their sockets. The Forget-Me-Clock II is a cartridge which plugs into the cartridge port on the side of your ST which means that its installation couldn't be simpler - you just plug it in and turn on your ST.

Software Included

Every Forget-Me-Clock II cartridge is supplied with time and date setting software for the Forget-Me-Clock II's clock together with a small auto-run

program which automatically sets your ST's system and keyboard clocks every time you turn on or reset your ST. Built into the setting software is the facility to stop the Forget-Me-Clock II's clock to save on battery life when the Forget-Me-Clock II is not being used.

Satisfaction Guaranteed

The Forget-Me-Clock II is supplied under Frontier's ten day money back guarantee, which means that if you don't like the Forget-Me-Clock II for any reason, you can return it for a full refund within ten days of purchase. The Forget-Me-Clock II has been designed to work with any model of ST whether it be ST, STM, STF, STFM, ST^E or Mega ST.

Two Year Guarantee

The Forget-Me-Clock II carries a full two year guarantee which includes the battery. Battery life has been tested to be many times the guarantee period. Frontier will supply replacement batteries outside of the guarantee period for a small charge.

Price

Forget-Me-Clock II Cartridge £24.99

Price includes VAT. Please add £1.15 for postage and packing to all orders under £50.00. Frontier accepts payment by Visa or Access. Price subject to change without notice. Goods subject to availability.



Frontier Software

MONITORS MONITORS MONITORS MON



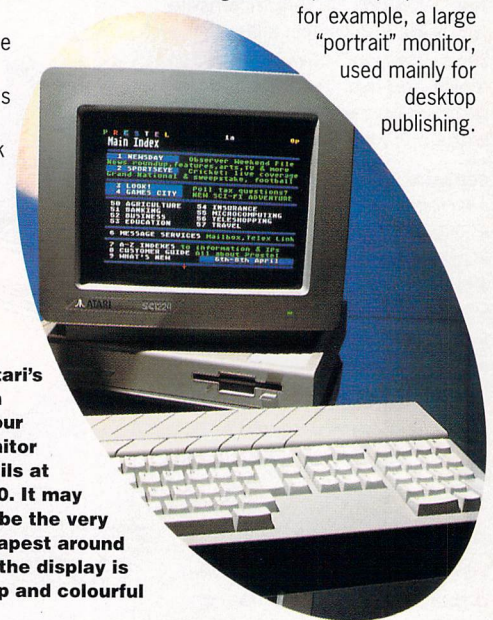
The odds are that the only visual display unit that's been attached to your ST is a television set – quite adequate, but its display is fuzzy and the sound not up to par. If you'd like to be able to read that text on the screen, then a monitor looks like the obvious answer.

Monitors offer excellent, sharp pictures. This is because they are designed specifically to be connected to a computer – they don't have to double up as something else. Using a monitor reduces eye-strain considerably, since you don't have to squint at a fuzzy image.

Your choice of monitor depends entirely on what you use your ST for. If you simply use it to word process, a **mono monitor** is your best bet. If you're a gamer, then a medium-resolution colour monitor is probably a good idea. Features to look out for are:

- whether it comes with stereo speakers (some do, which is excellent if you have an STE);
- if it has lots of sockets on the back (such as a SCART socket);
- just how clear that display is (does it break up at the top and bottom?);
- and most importantly,
- can it run off my ST? (Some monitors can't.)

Monitors come in lots of different flavours: mono medium resolution, mono high resolution, colour low resolution and colour medium resolution. There's also a variety of specialist monitors designed for specific purposes – for example, a large "portrait" monitor, used mainly for desktop publishing.



BEST MONITOR BUYS

- **CM8833 Mark 2 from Phillips.** The CM8833 has recently had a major overhaul and been improved beyond all recognition. For £239.99 you get 600 x 286 dot per inch colour resolution, stereo speakers and a green screen facility. The monitor also looks sexy as hell. Phillips ☎ 081 689 2166
- **SC1224 from Atari** is the ST maker's own medium resolution colour monitor, offering excellent clarity on screen. It looks

very classy and is very reasonably priced at £260. Atari ☎ 0753 33344

● **Budget buy: SM124 from Atari.** This monochrome monitor is superb value for money. It's been specifically designed to connect to an ST and gives you access to high resolution monochrome graphics. The picture is rock solid and nice and bright. What's more, it has "Atari" in blue letters on the front. Price £130 from Atari ☎ 0753 33344

■ **Atari's own colour monitor** retails at £260. It may not be the very cheapest around but the display is crisp and colourful

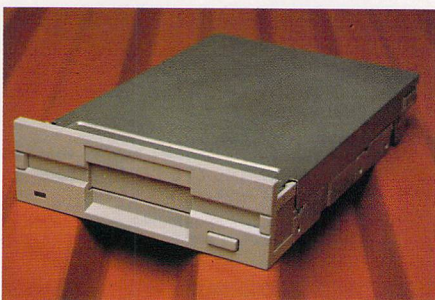
DISK DRIVES FLOPPY DISK DRIVES FLOPPY D



The floppy disk drive port is the most useful of all the ST's ports. With only one disk drive, after even a short time, the hassle of endlessly swapping disks becomes too much. Most computers don't even begin to realise their potential until they've got a couple of drives installed. Consequently, there are many drives available for your ST.

Most drives have similar insides – the actual mechanics are made by a few Japanese companies, but these bare-drives are often cased and badged by many different firms. Power supplies are sometimes fitted, enabling the drive to pick its power from the mains or a mains adaptor rather than the ST's own internal power supply.

Other drives come in double-packs, sometimes with two different styles of drive – commonly one **5.25 inch** and one **3.5 inch drive**, which is ideal for copying files between ST and PC disks. Some even display the track the drive-head is currently reading or writing.



■ **If you have an old-style single-sided ST you can add an internal double-sided drive**

UNMISSABLE FLOPPY DISK DRIVES

Since floppy drives are reasonably inexpensive you can pick them up at most computer stores – just scour the ads in *ST FORMAT*. Here's a list of some of the best floppy drives on the market

DRIVE	SIZE	PRICE	COMMENTS
Atari SF314	1Mb	£149.99	Atari's own drive – colour-keyed to ST casing
Citizen	1Mb	£69.95	Internal fitting, but needs modifications for most STs
Cumana CSA354	1Mb	£89.99	NEC mechanism, internal Power Supply Unit
PCML Double Drive	2x1Mb	£199	Twin double-sided, internal PSU
Power Dual Drive	2x1Mb	£110	Internal PSU
Power PC720	1Mb	£74.95	Built in PSU.
Power PC720E	1Mb	£59.95	Takes power from joystick port
Power Multidrive	2x1Mb	£199	Built-in PSU.
Power 5.25-inch Drive	1Mb	£99	5.25 inch drive with built-in PSU
Triangle Multi – Drive	2x1Mb	£239	Both 3.5inch and 5.25inch, internal PSU
Triangle 3.5	1Mb	£75	External PSU
Triangle Elite	1Mb	£129	Internal PSU and track counter

Perhaps the biggest confusion in the disk-drive world is the ST's internal drive. Early 520's were fitted with internal **single-sided drives**, which could store only 0.5MByte of data. Sadly, Atari got the drive-head on the wrong side, which meant that although double-sided drives can read all of a single-sided disk, single-sided drives can't read anything off a double-sided disk!

Single-sided drives are destined to become less and less compatible as time goes by, so it's worth upgrading. Internal 1MByte drive kits are available, and some firms even offer a fitting service.

As for the floppy disk socket, it's possible to

plug in a cased, separate drive, which the ST can immediately recognise as Drive B. You can then speed up your ST computing by at least 100%, as you say goodbye to constant swapping.

FLOPPY DRIVE BEST BUYS

- **Best buy overall: Cumana CSA354** 90 quid gets you a sound, reliable drive. You'll wonder how you managed without it.
- **Budget buy: Power PC720E** Low-cost solution, though a bit Heath Robinson!



PANDAAL
Marketing Ltd

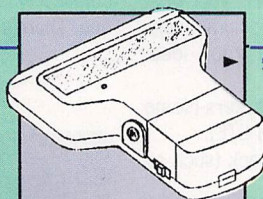
DAATAscan RANGE

The DAATAscan Pro range combine Japanese quality with British know-how. Our software has been developed over 2 years and has received rave reviews from leading ST journalists.

Software features:

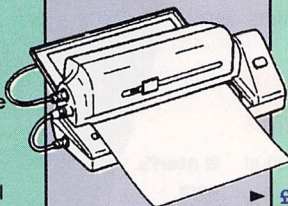
- Real-time scanning display
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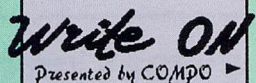
Write-On word processor features font library, import IMG, mail merge, paragraph tags, text styles, tabs & much more.

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DAATAfax, FILOFAXTM compatible computerised personal organiser. Notepad, Phonebook, Diary, Calendar & Graphics modules.



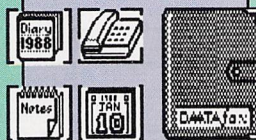
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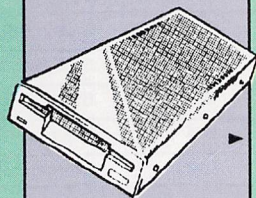
HARDWARE

DAATAdisk drive is a 3.5" external 2nd drive manufactured in the UK.

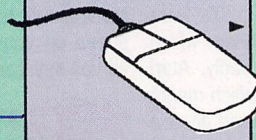
Features:

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DAATAmouse is a silky smooth high resolution microswitched replacement mouse almost twice as fast as Atari's standard mouse.



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Super Card £24.95 £19.95 "An Excellent Program", "Fast, Reliable and Inexpensive", "Very Easy To Use", "Indispensable", "Should Be In Everyone's Collection", "Great Value", "BUY IT!" - *New Atari User. Issue 44.*

B.Base II £14.95 "Extremely Good Value" - *Monitor Magazine.*

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Is your ST
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You can keep it informed with the very latest world news, share prices, weather, sports results and much more from Ceefax or Oracle. But unlike a Teletext TV all this free information isn't trapped behind glass. Now you can...

Save or Print. Pages may be saved to disc or printed out.

Programmable. The system can be programmed to get a series of pages and print or save them for your own programs to access. It could print out the days TV times!

Multiple display. Works with any kind of monitor and can display and update two pages simultaneously! Page selection from the keyboard or just by clicking with the mouse.

FastText. FastText reduces the waiting time for pages and the Review facility provides instant access to the last 16 pages received.

Digital Tuning. Tunes itself in automatically! While the prime purpose is for Teletext, if you have a CM8833 monitor you can use it as a colour TV.

Only a Microtext adaptor is as easy to use and can provide all these facilities and more! Everything is supplied, all you need is any type of ST and a normal TV aerial.

At just **£129.50 + VAT** (=£148.93) for an advanced Teletext TV its excellent value for money. International VHF/UHF version for use outside of the UK **£169.50.**

Make sure you're always up to date and get yours from Microtext.

The following software packages are compatible
with the Microtext adaptor:

ProShare ST	Stock market analysis by TC Developments	£49.95 inc
Market Breaker	Stock market analysis by Jewsbury Software	£69.95 inc
K-Spread4T	Spreadsheet with Teletext option from Kuma	£149.94 inc



MICROTEXT



Dept SF, 7 Birdlip Close, Horndean, Hants. PO8 9PW
Telephone: 0705 595694 Fax: 0705 593988

HARD DRIVES HARD DRIVES HARD DRIVES



There are three main problems associated with floppy disks: they're slow, they don't hold much data and

they aren't terribly durable. A hard drive overcomes all these faults and adds some very useful advantages besides.

A hard drive is in effect a very large unfloppy disk. The drive surface is like an upturned soup bowl. Drive heads hover about 10 microns above this drive surface and read data magnetically. Hard drives are very quick at storing and recovering data – an access time of about 20ms is about the average, and for ST-compatible drives capacities range from 20 MBytes right up to 660 MBytes. A 100 MByte drive gives you the storage capabilities of about 120 floppy disks, with none of the hassle of finding the right one.

Buying a hard drive can be a bewildering task. You've got to work out how much space you need – and it's very easy to underestimate. Under the casing, however, there is little difference between the various models. Some things to look out for are:

- if it's auto-parking or not (if it is, the drive head automatically "parks" itself clear of the surface whenever you switch off, ensuring that data isn't damaged if the unit is moved);

- access speeds (the higher the better);
- whether the drive comes ready to run;
- the software which runs the drive;
- if it comes with a throughport (so you can plug a laser printer into the back of it);
- the physical size of the unit; and
- whether it has an internal fan – these can be noisy.



SO WHO NEEDS A HARD DRIVE?

Anyone who uses an ST for something other than game-playing would find a hard drive useful. If you need to store and retrieve lots of information, then it makes sense to phase out your floppy disks and buy a hard drive. Let's say you do a great deal of word processing: with a hard drive you can have all your text files stored in one folder on the drive, rather than scattered across hundreds of floppies. If you're a musician you can store a large number of samples in one place on a drive. All your programs can be ready for access, next to your ST whenever you need them.

■ The price of hard drives has fallen dramatically in the last few years and there are many to choose from, offering anything from 20 MBytes of space right up to several hundred



HARD DRIVE BEST BUYS

- **Vortex Datajet** is one of the priciest drives about – but you get plenty for your dosh. It's fast, well designed and rugged. It comes with some extremely comprehensive software. Dip switches positioned on the back mean you can easily customise the way it's set up. The price of a 30MByte drive is £499, from Silica ☎ 081 309 1111
- **Data Injection's 900E** drive is a very new design. The drive is extremely small (the same size as an external floppy drive) and it doesn't

have a fan – the casing does all the cooling. It's very competitively priced: a 110MByte drive costs just £599. Available from Power Computing ☎ 0234 273000

- **Budget buy: Reference 40** from Evesham Micros is a great budget buy. A 40MByte drive will set you back £399, which is excellent value. It comes with the superb ICD software, a DMA throughport (for adding a laser printer too) and a cooling fan. Evesham Micros ☎ 0386 765500

R PRINTERS LASER PRINTERS LASER PRINT



Laser printers are becoming more and more popular – and ever cheaper. They are vastly different animals to conventional printers – more like photocopiers, in fact. Inside every laser printer there's an electrostatically-charged drum. The laser transfers a "charge-image" of your page onto the drum, which is then covered in a black powder called toner. The toner sticks to the drum only on the charged parts of the image (the lines and letters), and the rest falls back into a toner reservoir. The drum is then rolled against the paper, causing the paper to "take" the image. This sheet is then passed through a

set of heated rollers which melt the toner onto the paper, producing clear, crisp lines.

The chief advantage of laser printers (also known as page printers) is their high-quality output. They are also more versatile than other print-

ers – with a resolution of 300 dots per inch, you can really do justice to detailed images on a laser printer, making them ideal for desktop publishing. The only problem with recent lasers is that some software packages don't yet support them.

ST-COMPATIBLE LASER PRINTERS

The high cost of laser printers means there still aren't many available. Here are the ones to go for

Laserprinter	Price	Contact	Speed	Comments
Atari SLM804	£1379.99	☎ 0753 33344	8ppm	Builds image in ST's memory – eats memory!
Atari SLM605	£1149	☎ 0753 33344	6ppm	Smaller, newer version of SLM804
Canon LBP-4	£1380	☎ 081 773 3173	4ppm	Good buy but not the fastest
Canon LBP-8 Mk 3	£2294.25	☎ 081 773 3173	8ppm	Prints portrait and landscape
Epson EPL-7100	£1378.85	☎ 0442 61144	6ppm	First in a new range
Hewlett Packard LaserJet Series 2	£1999	☎ 0344 369369	8ppm	
Kyocera F-800	£1595	☎ 0734 311500	8ppm	Includes Kyocera's Prescribe language
Star Laserprinter 8 II	£1989	☎ 0494 471111	8ppm	Portrait/landscape on same page
Sharp JX950	£1029	☎ 061 205 2333	6ppm	Low-cost, high quality output

Note: ppm = pages per minute.

Note: Check that your software can support the laser printer you're thinking of buying.

BEST LASER PRINTER BUYS

- **Best buy overall: Star Laserprinter 8 II**
The Star has everything you'll ever need for top-quality printing, amateur or professional. £1989 Star Micronics ☎ 0494 471111

- **Budget buy: Sharp JX9500**
A good quality, yet reasonably priced starter in the laser market. Excellent results are simple to attain. £1029 Epson ☎ 061 205 2333

PRINTERS PRINTERS PRINTERS PRINTERS



Conventional printers fall into two categories: **impact** and **non-impact** printers. Impact printers work on the same principle as a normal typewriter: they rely on the print mechanism striking through an ink-soaked ribbon. They are therefore much noisier than the non-impact type.

There are two kinds of impact printers: dot-matrix and daisy-wheel. The **daisy-wheel** has

a circular wheel, shaped like a daisy, with a character on the end of each "petal." When printing, the wheel spins round, selects a character and fires a hammer at it. This pushes the character onto the inked ribbon, leaving a crisp image on the paper. Sadly, daisy-wheels only print the characters contained on the daisy – if you want new fonts you have to get a new wheel.

Dot-matrix printers have just one small head which moves sideways across the

width of the printer. Inside this head is a column of 9 or 24 tiny pins which strike the ribbon, making each letter out of these dots. Dot-matrix printers give a dotted look to the final image, but this is offset by their cheapness, reliability and ease of use. Coloured ribbons can be used to produce colour images.

Non-impact printers also come in a number of forms. The most common are **laser printers** (see page 27) and **ink jet printers**. Ink jets have tiny nozzles in place of the pins in dot-matrix printers, and a reservoir of ink stored inside the printer which is piped to the nozzles. Tiny electrical charges fire a minuscule drop of ink straight at the paper. The image is built up using the resulting dots in the same way as a dot-matrix. The immediate advantage is the noise level – ink jets are very quiet, since the only noise is generated by the paper roller and the head moving. However, paper choice is more important. Glossy paper gives gorgeous results, but because the paper doesn't absorb the ink very quickly there's a risk of smudging. Rougher paper, on the other hand, absorbs ink quickly, and can sometimes act like blotting paper, creating "feathery" images where the colours bleed together. However, a good combination of ink jet printer and paper produces far better results than the best dot-matrix.

CONVENTIONAL PRINTERS

With the rising popularity of DTP and word processing on home micros, the range of printers has grown enormously. Now you can pick up a decent printer for under £200

Printer	Price	Contact	Type	Speed	Colour	Comments
Brother 1109	£195	☎ 061 330 6531	9 pin	100/25	NO	Entry-level machine
Canon PJ1080	£688.85	☎ 081 773 3173	Inkjet	37 cps	YES	
Citizen 120D	£251.85	☎ 0895 72621	9 pin	120/25	NO	
Citizen Swift 9	£274.85	☎ 0895 72621	9 pin	192/40	NO*	
Citizen Swift 24	£419.75	☎ 0895 72621	24 pin	192/64	NO*	
Citizen Produt 9	£504.85	☎ 0895 72621	9 pin	300/60	NO*	
Citizen Produt 24	£688.85	☎ 0895 72621	24 pin	200/66	NO*	
Epson LX400	£198.95	☎ 0442 61144	9 pin	180/25	NO	Entry level machine
Epson LX850	£320.85	☎ 0442 61144	9 pin	200/25	NO	No proportional spacing
Epson LQ550	£458.85	☎ 0442 61144	24 pin	180/60	NO	Entry level machine
NEC P2 PLUS Pinwriter	£401.35	☎ 081 993 8111	24 pin	192/96	NO	
NEC P6 PLUS	£631.35	☎ 081 993 8111	24 pin	265/90	NO*	
Olivetti DM105 Colour	£287.44	☎ 0908 690790	9 pin	150/30	YES	
Panasonic KX-P1124	£399	☎ 0344 862444	24 pin	192/53	NO	
Seikosha SP-2000	£228.85	☎ 0753 685873	9 pin	200/50	NO	Entry level machine
Star LC10	£228.85	☎ 0494 471111	9 pin	120/30	NO*	Colour available
Star LC24-200	£366.85	☎ 0494 471111	24 pin	222/67	NO	
Xerox 4020	£1437.50	☎ 0895 51133	Inkjet	80 cps	YES	

Note: speed figures denote draft/NLQ mode speeds where applicable, all in characters per second.

Note: asterisks in the colour column denote upgrade kit for colour is available at extra cost

BEST PRINTER BUYS

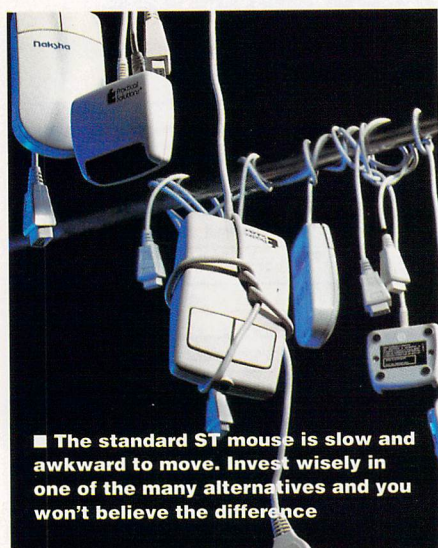
● Best buy overall: Star LC24-200

24-pin quality, and the electronic dip-switches and front-panel presets provide excellent versatility. A huge range of fonts is on offer
£366.85 Star Micronics ☎ 0494 471111

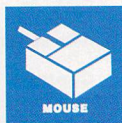
● Budget buy: Epson LX400

A slightly older but still widely available printer, the LX400 gives good quality results at a low cost. An ideal first-time buy!
£198.95 Epson ☎ 0442 61144

JOYSTICKS MICE AND JOYSTICKS MICE AND



■ The standard ST mouse is slow and awkward to move. Invest wisely in one of the many alternatives and you won't believe the difference



The **mouse** that comes with your ST isn't very robust so an upgrade may be in order. There are several points to bear in mind when buying a new mouse:

- does it sit nicely in your hand?
- Are the switches easy to click?
- Does it move smoothly across the mouse mat?
- And how long is the cable?

BEST MICE

● **Naksha's mouse** is a very well built affair. Buttons click nicely and resolution is high. It costs £35 from Power Computing ☎ 0234 273000

● **Daata Mouse** (£29.95) from Pandaal Marketing (☎ 0234 855666) is another smooth mover. It works at a resolution of 280dpi.

● **Pilot mouse** from Logitech (☎ 0753 37222) is a self-cleaning, ergonomically shaped affair which looks very swish. It costs £34.



Joysticks can be temperamental beasts. If you play lots of shoot-'em-ups or platform games, then you need a sturdy stick. Auto-fire is a nice option to

have if you play *Xenon 2* non-stop. Rugged micro switches are almost essential these days: you can tell if a joystick has them by the clicking sound when you move it.

BEST JOYSTICKS

● **Quickshot 3 Turbo Joystick** is an easily held micro-switch, auto-fire affair with a great feel to it. Price £14.95

● **Sting-ray** from Spectravideo is an ergonomic unit with a very different design and sturdy micro-switches. Price £14.95

● **Top Star** from Spectravideo is the Rolls-Royce of joysticks. A very sturdy unit with a steel shaft, it costs £23.95.

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THE BITMAP BROTHERS



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Amiga, ST, PC



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Hard Drives

- ☐ Autoparking 3.5" mechanisms.
- ☐ Full metal case suitable as monitor stand.
- ☐ On/off button and DMA device selector mounted on front.
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- ☐ Megadrive controller, low power, controls up to 8 SCSI drives.
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- ☐ Up to 255 partitions, up to 1 Gigabyte in size.
- ☐ Selection of Accessories/boot partition with boot editor.
- ☐ Includes backup software and Midistudio demo software.

Price Breakthrough

We can now offer a range of hard drives all built around cached Quantum mechanisms with an time average access time for the incredible prices shown below. QUANTUM mechanisms are used which are of the highest quality. These Quantum mechanisms are built to American military standard and include a 2 year manufacturers warranty (from date of manufacture) offering the best possible protection for your data.

52Mb 11ms (Quantum drive)	£ 419.99
105Mb 11ms (Quantum drive)	£ 529.99
210Mb 11ms (Quantum drive)	£ 899.99

Add £15 for HD with ICD board (includes clock). Phone for other capacities.



3.5" Drives

CSA 354: ST 3.5" drive.	£69.99
CAX 354: Amiga 3.5" drive.	£64.99
ST Internal drive upgrade.	£64.99

The Cumana, ST internal drive requires the ST's case to be modified (full instructions supplied). The external ST drive is a high quality, slim, quiet drive which comes complete with integral power supply and so does not draw power from the ST which could cause problems. Add £3 P&P for drives.



Quality Disks

Quantity	Bulk Sony or Kao		Sony Brand Boxed in 10's
	Loose	Boxed	
10	£ 5.99	£ 6.99 Includes x10 Ryford black plastic box	£ 9.49
40	£ 20.99	£ 26.99 Includes x40 Lockable, disc box	£ 34.99
100	£ 48.99	£ 57.99 Includes x100 Lockable, disc box	£ 84.99
150	£ 66.99	£ 83.99 Includes x150 Posso Stackable disc box	£ 125.99

All disks carry an unconditional lifetime guarantee. Please add 75p P&P for each 10 disks or £3.00 for 100 and above.

A4 Scanner Monitors

- ☐ 200 Dpi scanner.
- ☐ 16 grey scales or Black/White mode.
- ☐ High quality thermal image printer.
- ☐ Acts as photocopier.
- ☐ ST & Amiga £449.99
- ☐ PC version £479.99.
- ☐ Requires 1Mb RAM.
- ☐ Thermal paper available ex-stock at £7.99 per roll.

IMG scanner still available at an incredible £49.99

Atari SM124 Mono	£ 109.99
Philips 8833MkII Colour	£ 249.99
Cmdr 1084S Colour	£ 269.99
The 1084S and SM124 prices apply while stocks last. Phone for availability.	
Philips 15" TV	£ 269.99
Includes: FST, remote control, Scart input (giving near monitor quality display), 60 tuner presets, sleep timer and Fastext.	
All displays come with Scart cable. Deduct £10 from Monitors only, if bought with computer.	

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We are the longest established Atari dealer in the UK. We have developed an extensive customer service policy which means that we test all Hardware/Software prior to despatch to ensure that goods arrive in working order. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup. This isn't just our opinion, we were voted "Best Dealer 1989" by the readers of ST World magazine, not for "the number of boxes shifted", but for quality service.

On Site Warranty: We have recently extended our backup programme by offering on site warranty as an option on all ST's. We already offer this service on, All Star printers and Philips monitors listed.

All prices are correct at copy date 21/01/91, and are subject to change without prior notice. All prices are accurate while stocks last. Phone for up to date prices. All prices include VAT, there are no hidden extras (WYSIWYG). Delivery (in Mainland UK) is free, on orders over £100 (add £10 for next day courier delivery. All prices available on Mail Order. Shop prices may differ.

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Midistudio Junior still available £49.99
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Use your ST to send faxes. Fully featured modem accesses bulletin boards/commercial systems.

- ☐ Fully Hayes compatible.
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VGA Colour Monitor	£ 99.99
PC Emulators for ST	
PC Speed, XT Emulator	£ 99.99
AT Speed, AT Emulator	£ 199.99
AT Once, AT Emulator	£ 199.99

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512K STFM, 16 or 4 chip kit	£ 39.99	512K ST board+chips, kit	£ 59.99
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512K SIMM/SIPP (STE)	£ 39.99	2Mb SIMM/SIPP (STE)	£ 119.99
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Exchange STFM PSU	£ 59.99	ROM switch + TOS 1.4	£ 49.99

Please check the configuration of your machine with our staff before ordering any upgrade. All upgrades/repairs carried out by our service centre carry a 90 days parts and labour guarantee. Our service centre can repair/upgrade any ST, Amiga. Please phone for repair/upgrade charges. Please add £150 P&P for upgrades priced under £100.

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All dot matrix printers come complete with IBM Centronics cable. All Star printers include 12 months on site warranty, UK Mainland only.

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Star LC-24/10		£ 209.99	Citizen Swift	192/64cps	£ 319.99
Star LC-200 colour printer		£ 219.99	Citizen swift Colour upgrade		£ 39.99
Star LC24-200 222cps		£ 249.99	Citizen Swift 9		£ 209.99
Star LC24-200 colour printer		£ 319.99	64K buffer/3 input switcher		£ 79.99
Star Laser 8DB 2Mb RAM		£ 1899.99	256K buffer/3 input switcher		£ 149.99



How to Pay
You can phone your Access or Visa card details or send a cheque/postal orders made payable to Ladbroke Computing International. Please allow sufficient clearance time for cheques.



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MODEMS MODEMS MODEMS MODEMS MODEMS



A modem is a piece of hardware which enables your ST to talk to other computers down the phone line. It takes the signals your ST transmits, turns them into a binary code and squirts them down the phone-line. Modems work at different data transfer speeds, known as baud rates: the higher the baud rate the faster you can access information. This is important if you're going to be downloading lots of software.

With a modem plugged into your ST you can dial up either a hobbyist's computer or a com-

mercial network. If a hobbyist has opened up his computer and files to outside scrutiny, then he runs a bulletin board system (BBS). There are a large number of ST specific bulletin boards out there, crammed full of goodies. However, a commercial network offers facilities which a BBS never could, because you are paying for the service. These include electronic mail, commercial software and on-line purchasing.

The modem has changed over the last ten years from a slow, unreliable piece of hardware, into a sophisticated, easy-to-use package. Older modems had dials on the front which you had to

set manually. Modern modems are configurable from software. Features to look out for are:

- the baud rate (the higher the better);
- whether it's auto-dial or not; and
- if it's Hayes compatible (industry standard).



■ Plug a modem into your ST and you can talk to other micros round the world – just beware you don't run up a huge phone bill

BEST MODEM BUYS

● **Amstrad SM 2400** is a great buy. 2400 baud is just about as fast as bulletin boards get and more than good enough for commercial networks. This is an auto-dial unit which is fully configurable from within software. The SM 2400 costs £286. Amstrad ☎ 0277 230222

● **Budget buy: Linnet modem** from Pace is a good budget buy. Weighing in at £149.99, this small unit can work at speeds up to 1200 baud, which is adequate for accessing all commercial systems and most home-brew BBSs. Available from First Choice ☎ 0532 637988

MIDI DEVICES MIDI DEVICES MIDI DEVICES



The ST's Musical Instrument Digital Interface (MIDI) sockets can connect you directly to a vast world of music. There are many, many types of

MIDI devices, each category containing a huge number of individual machines. This is because MIDI is a standard communications language which allows all forms of electronic music devices to be linked

especially an ST, with its in-built sockets, vast memory storage and fine displays – enables you to control all these varied devices from one source. Tunes can be written and rewritten, added to, mixed, given rhythm and percussion, synced to a video or a lightshow and then stored to disk, enabling you to produce a perfect performance every time.

■ Budget MIDI key-boards like the Casio CT470 are all you need to step into the creative world of MIDI

To make all this work, you need some form of control software. You can't just plug in a MIDI device and control it from the Desktop! You can

write your own BASIC programs if you feel like it, but

you're probably better off buying one of the many sequencing packages available. These can control many devices at once, using the MIDI channel system, and enable you to write tunes with the mouse or your synth keyboard. Each instrument's tune can be heard independently or along with the accompaniment, and edited separately. Effects can be controlled and recorded in the same manner as with any other MIDI instrument. Even synthesizer preset sounds can be switched, while the song is being played.

MIDI requires you to connect two leads per instrument, and in some cases three. Your ST

has a "MIDI in" socket which picks up the notes played on an external device and a "MIDI out" socket which sends MIDI data to the instrument connected at the other end. That instrument in turn may have up to three MIDI sockets – a "MIDI-in" for receiving data, a "MIDI-out" for sending its own MIDI information and a "MIDI-thru" which takes data from the "MIDI-in" and passes it, unchanged, straight out again.

This enables you to chain several instruments together – so you can, for example, play notes on a master keyboard which are re-directed by the ST back to other keyboards, so that they actually make the sounds you hear. That's how they do it on *Top of the Pops!* **stf**

■ If you're curious to know exactly how MIDI works, look up *ST FORMAT's* special user-friendly introduction to MIDI in issue 19. For information on ordering back issues, see page 136

USEFUL MIDI DEVICES FOR STARTING OUT

● Keyboards

KORG M1 – excellent quality presets, as used by many ST musicians for games samples. £1399. Korg ☎ 081 427 3397

YAMAHA SY22 – The bottom-end of Yamaha's new range of vector synthesizers £250. Yamaha ☎ 0908 371771

CASIO Tonebank CT470 – One of Casio's range of budget-priced MIDI keyboards for the beginner. £100. Casio ☎ 081 450 9131

● Desktop Music

ROLAND CM-32P – Save space, get the whole caboodle on top of your ST! £445. Roland ☎ 081 568 1247

GET EVEN MORE OUT OF YOUR ST

Buying any form of hardware, or even software for that matter, is a tricky process. What should you look out for? What's the best choice? Is there a cheaper alternative? Before making any crucial buying decisions, read the comprehensive reviews of the hardware or software you're considering in the invaluable *ST FORMAT* book *Get the Most Out of Your ST*. It contains everything you need to become a real power user! For information on how to order, see page 135

Evesham Micros

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- ST WORLD, September 1989



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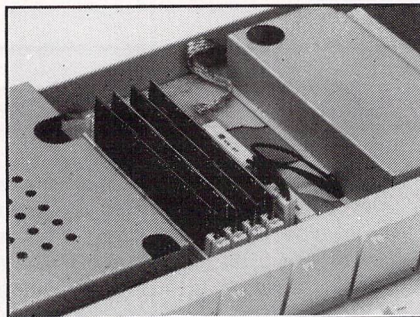
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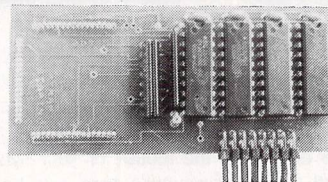
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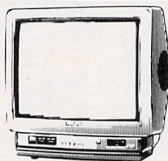
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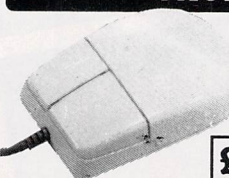
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4 Power hard drives must be won!

Desperate to upgrade your ST's memory but short of the folding stuff? ST FORMAT and Power Computing give you the chance to win one of four fabulous 900E Hard Drives. And you say we're mean, I dunno...

Are you one of those thousands of unfortunate people who keep losing floppy disks among old manuals and yesterday's lunch? Are you sick of constant disk swapping and all those "disk full" messages when you try to save your latest novel/music sample/picture? Then you're no doubt yearning for some way of getting all your information into one place. What you really need is a hard drive. In our feature on expanding your ST (see page 22), we studied the hard drives you can plug

into your machine and the 900E came out as the best buy – so we're giving a handful away.

In conjunction with Power Computing, we've got four 20MByte hard drives up for grabs. The 900E drive is the latest addition to Power's hard drive line up and it's certainly one of the best in its price range. The 900E is fast and ultra-slim, packed into a tiny case the size of a standard floppy. This special casing eliminates the need for one of those noisy internal fans, so you don't need to put up with the annoying whirring sound associated with most hard drives. On top of this, the 900E comes with the very latest in hard disk controlling software.

But don't take our word for it, get your hands on one of these four monsters for free. Just answer our traditionally Mensa-style ST FORMAT competition question, bung the answer on the back of a postcard and wing it off to: Power Hard Drive Comp, ST FORMAT, 30

Monmouth Street, Bath. BA1 2BW. Get it to us before the end of Friday 15th February and you could be one of the four lucky winners. **stf**

THAT BURNING QUESTION

The Power 900E has a storage capacity of 20MBytes. How many double-sided floppy disks can you squeeze into this space, assuming each floppy disk holds 720K?

THE RULES BOX

1. Employees of Power Computing or Future Publishing and their families are not eligible to enter this competition.
2. Entries must be received by Friday 15th February and not a moment later.
3. Multiple entries not only cost you a fortune in stamps but also won't win you the compo because we'll bin 'em. Send in multiple entries and it won't be hard drive, just hard cheese.
4. All the competition entries become the property of Future Publishing.
5. No cash alternatives can be offered.
6. The Judge is a thoroughly decent sort of fellow and his decision is final – so no moaning if you don't win.

■ Feast your little ogling eyes on Power Computing's fabulous 900E Hard Drive. Enter this compo and it could soon grace your own home, etc etc... (tinfoil not included)



sim earth: master of the universe

Get ready with the Optrex and matchsticks, here comes a game more addictive than breathing. *Sim City* made you God in your home county, but after playing the game for a couple of months you couldn't help longing for more mammoth goals. Maxis, the American-based programming team, felt the same way – and their answer to the problem is *Sim Earth*. Now you don't build motorways but set up land masses. You don't provide sporting facilities for an overactive population but place life forms in habitable locations. No more raising and lowering taxes; now you have the greenhouse effect and poisonous gases to worry about.

■ *Sim Earth* is based on James Lovelock's Gaia theory, which in turn was inspired by novelist William Golding. Call up the Gaia window to see how well you're doing. The window reflects the state of the planet from perfect harmony to total catastrophe



One of the criticisms of *Sim City* was that it was just too simple. It was instantly addictive, but after playing it for a few weeks you begin to feel as if you're placing lego bricks. Spare a thought for programming genius Will Wright who came up with the concept. "I worked on *Sim City* for almost three years," he told *FORMAT*; "I am totally sick of it."

After the release of *Sim City*, Maxis asked the game's players what they thought of the

"I worked on Sim City for almost three years – I am totally sick of it"
– Will Wright,
game designer

concept. "Almost all the response we got from *Sim City* asked for more elements to the simulation, so we threw everything we possibly could into *Sim Earth*." The result is a considerably more complex game – so complex, in fact, that it comes with a 220 page manual featuring an extensive tutorial section.

Such complexity tends to turn people off, but according to Will the initial reaction to the Mac version (already on release in the States) suggests that many people were so hooked by

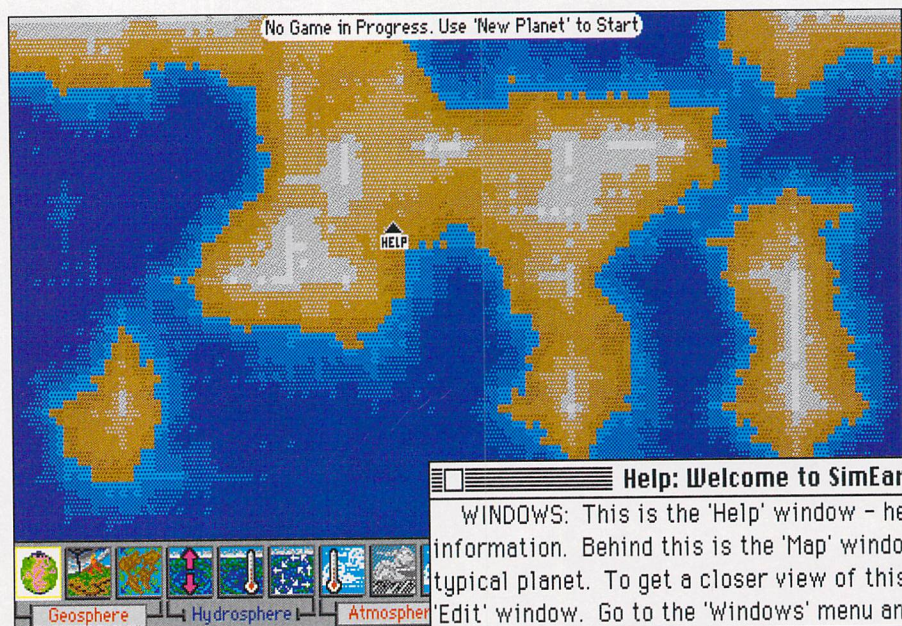
Over 400,000 copies of Sim City were sold worldwide – and, more importantly, ST FORMAT readers voted Sim City the best game of 1990. A likely contender for that same position in 1991 is its successor, Sim Earth. Mark Higham gives up his mayor's cap for the chance to talk to designer Will Wright about his daunting evolution simulator

Sim City they just can't get enough of its follow-up.

Sim Earth is played out on a planet in its earliest days of formation. As an indication of the depth of the game, the programmers recommend you sit back and watch for a while as the oceans begin to form and new land masses evolve. Initially your planet has no atmosphere, so meteorites

can strike at any moment – but in the early stages of the game these help to develop the shape of your continents and can be useful.

The chance to design your own cities and exercise your artistic temperament made *Sim City* a huge hit. Maxis have gone to great lengths to sustain that same element in *Sim Earth*. Using a menu system to invoke disasters, you can thrust meteors anywhere on your planet. Toss them onto land and you can create huge craters which quickly turn into lakes. Alter-



■ Is this going to be the most addictive game of 1991? Game designer Will Wright thinks so, and it's certainly got the depth to be a big hit. "*Sim Earth* is mainly a simulation of earth-like planets," Will reveals. "The Venus model works pretty much under the same assumption, the Mars model a bit less so. The early timescales are mostly simulation; the Civ and Tech timescales are more gamish in design"



■ By clicking on the disasters icon you can call up some natural and unnatural disasters. These are extremely useful in the beginning of a game to help shape the continents and influence the atmosphere

natively, invoke a few earthquakes to form mountain ranges or move continents round the globe. When you create these disasters, however, there's a price to pay. Meteors add moisture to the air, which increases rainfall but contributes to the greenhouse effect (you can take an air sample to test the make-up of the air). Volcanoes can be used to form mountain

*"A butterfly beating its wings
can have as much impact as
an Ice Age"*

ranges but they also create dust which can kill surrounding life.

The point of the game isn't simply to develop an aesthetically pleasing planet. By creating a huge variety of locations you can encourage all sorts of plant and animal life-forms to develop. You can introduce your own life-forms from a menu of 21 possible ➤

LIFE IN THE FAST LANE

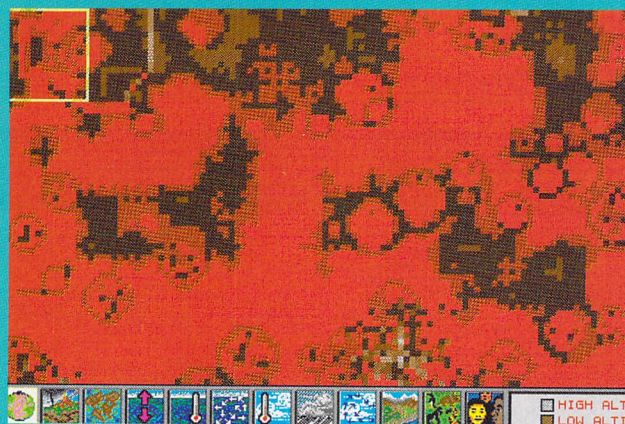
The Gaia theory was first put down on paper by James Lovelock. It's a theory about the evolution of the Earth which says that the development of the planet must be considered as a whole.

Science has arbitrarily divided the parts of the planet into the biosphere, atmosphere, lithosphere and hydrosphere. But the Gaia theory suggests that the planet be considered as a single unit. Every element in the development of this planet has a knock-on effect on other elements on the opposite side of the globe. For example, an animal life-form might die out as the result of a climate change, but what caused this change in climate? Possibly a continental drift, but what caused the drift? If it was an earthquake, then what caused the quake?

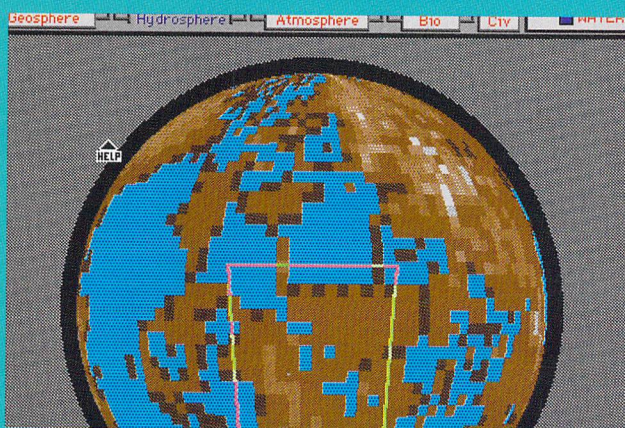
Expanding this idea, the slight movement of air caused by a butterfly beating its wings can have as much of an impact on the development of the planet as the Ice Age.

In *Sim Earth* this means you need to consider every plant, animal, land mass and more before you make a change. Particularly, keep an eye on the temperature and climate, which can be early indicators of big problems.

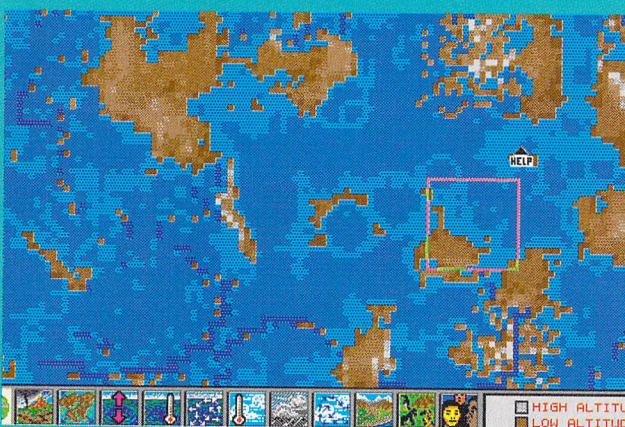
NO TIME FOR REST, MY BOY - YOU'VE GOT A PLANET TO BUILD



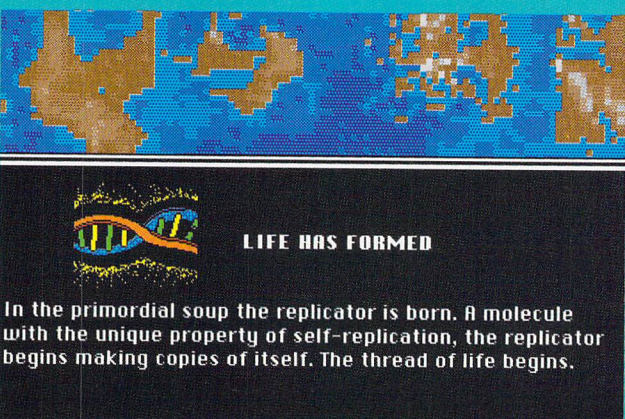
■ You can stand back and watch the Earth develop at the start of a new game. Here the surface is beginning to cool



■ Looking at the globe view of the Earth a few thousand years later, you can see the continents beginning to form



■ This is a long way from resembling today's Earth, but as time passes and you develop life-forms the continents grow gradually closer



■ Give it time - 0.6 billion years here - and your first life-form evolves. It's only boring sea life at the moment, but at least you're on the road towards sentient life



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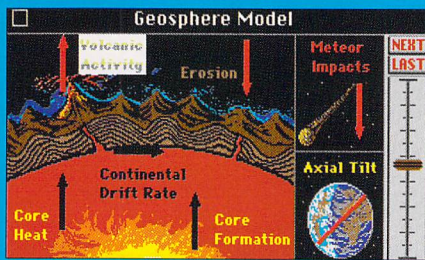
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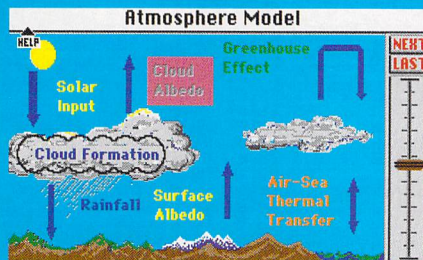
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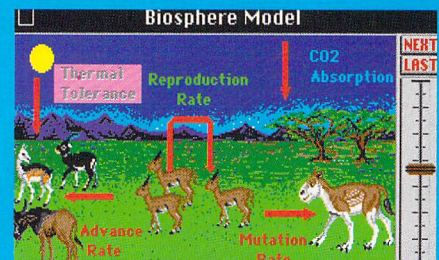
WHAT YOU SHOULD KEEP YOUR EYE ON: A MODEL EXAMPLE



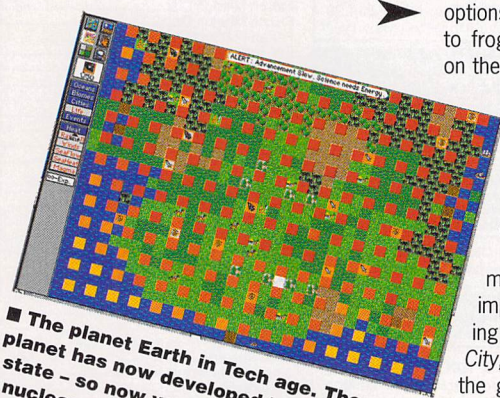
■ There are three main models worth watching. First, the Geosphere model controls all aspects of the planet. It reflects continental drift and core formation which change very slowly



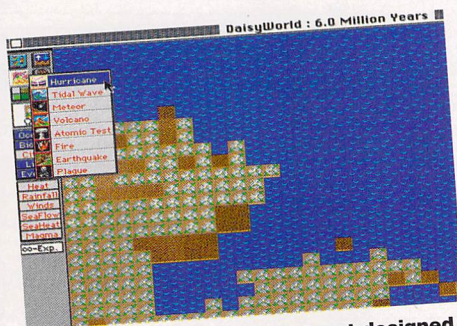
over millions of years. The only way to gauge these changes is to examine the Geosphere model. Next, the Atmosphere model enables you to change the Sun's heat and adjust the greenhouse effect.



Move everything up and global warming takes over. The Biosphere model is only effective when life begins to develop. You can then adjust the rates at which it mutates, reproduces and advances



■ The planet Earth in Tech age. The planet has now developed to an advanced state – so now you need to watch out for nuclear explosions and the greenhouse effect. Here, the temperature guide has been switched on, revealing the rising land temperatures



■ Daisyworld is a special planet designed to test the Gaia theory. There are only eight life-forms for you to play with

options, ranging from single-celled sea-creatures to frogs, dinosaurs and man – and depending on the conditions you create, man may not necessarily evolve as the sentient life-form.

"I wanted to see how educational I could get," explains Will. "Most people understand cities to a fair degree. However, I think most people know very little about the history and dynamics of Earth."

Obviously the game wouldn't be much fun if there weren't some restrictions imposed on your domination. Instead of paying for items with cash, as you did in *Sim City*, the fee in *Sim Earth* is energy. You start the game with a full stock of energy, but as you place life-forms and create disasters your energy is used up. The plant and animal life generates some energy, but only when you're well into the action. The other limit is time: the Earth can survive for only ten billion years before the Sun gets so hot that it kills all life on the planet – a sobering thought!

"About ten months of research time went into *Sim Earth*," explains Will. "Additionally, we had a lot of design input from Dr. James Lovelock (who came up with the Gaia theory, around which the game is based) and about six university professors."

One of the first things you notice when you set your eyes on *Sim Earth* is a surprising but welcoming resemblance to *Sim City*. This is largely because of the way *Sim Earth* uses the ST's system of windows and drop-down menus in its design.

The ST's window system is notoriously slow, however, so one of our biggest criticisms of *Sim City* was its speed. The ST version of *Sim Earth* is being coded by Surrey-

based team Probe Software, who also wrote the ST version of *Sim City*, and project manager Neil Young assured us that Probe are completely rewriting the user interface to make this game faster.

Although this is good news, it sadly means that we're going to have to wait until late Spring before *Sim Earth* is released for the ST. In the meantime, start reading up on planetary evolution – it could make all the difference when you try to sustain life in flammable forests or frozen oceans. **stf**

FOLLOW-UPS GO ON AND ON AND ON

After the release of *Sim Earth* in the Spring, don't expect Maxis to disappear off the face of the planet. If you're one of those gamers who still longs to see the full potential of *Sim City* explored, you'll be glad to hear that Will Wright is working on the follow-up, *Sim City 2*.

Will Wright gives this glimpse of what we'll be seeing in 1992: "There are about 100 things I thought of adding to *Sim City* at one point or another – the biggest challenge was deciding how many I could leave out. Most of the major omissions from *Sim City* will make it into *Sim City 2*. This will add a 3D terrain (like the one in *Sim Earth*), subways, water flow management, agriculture, freeways, one-way roads, zones of any shape [in *Sim City* they were all square], adjustable model assumptions, vastly expanded budgeting, selectable industries, many more special zones and about a billion other things."

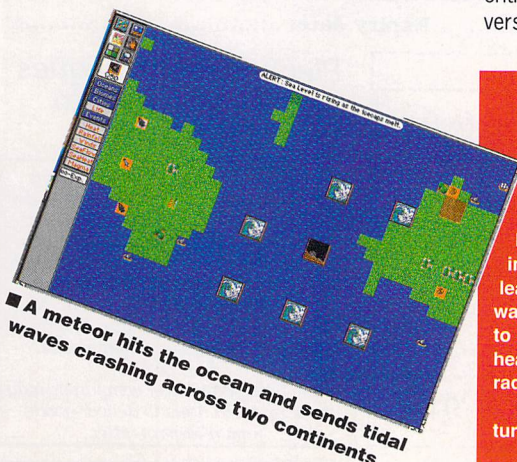
GO GREEN OR PERISH

The greenhouse effect plays an important role in *Sim Earth*. The Earth's atmosphere is transparent to incoming rays from the sun, but 48% of the radiation is absorbed by the ground and then emitted back as infra-red radiation. Infra-red radiation cannot leave the Earth because carbon dioxide and water vapour absorb it rather than permitting it to escape into space. This absorbed radiation heats the atmosphere, and this process in turn radiates heat back to the Earth.

If this didn't happen the surface temperature of our planet would be below freezing and

all the oceans would be frozen. After the delicate balance of carbon dioxide and water vapour, even a little, and you can severely affect the Earth's climate. Since the beginning of the Industrial Age the amount of carbon dioxide in the atmosphere has steadily increased. Usually the molecules would be absorbed into the oceans but we are emitting too much carbon dioxide for the oceans to digest, so the climate seems to be changing.

If you allow the global temperature to rise enough, then the polar ice caps melt and flooding devastates your coastal cities.



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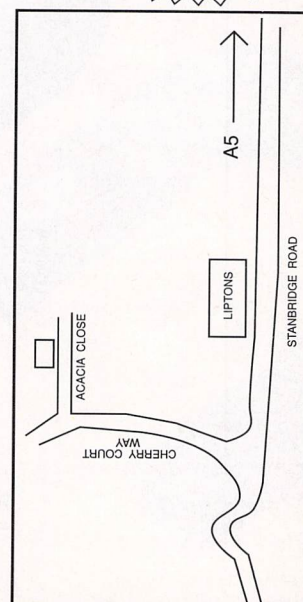
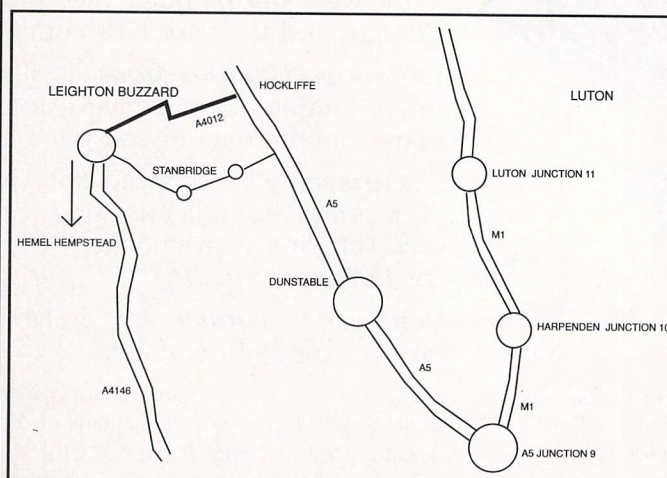
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Side 1

TURRICAN 2 – A fully-playable extract introducing you to the world of the most varied shoot'em-up the ST has seen in ages

AUTOS GALORE – Ten – count 'em, ten – terrific accessory programs to give your ST a real AUTO-boost whenever you boot up

PASSWORD – Stop those data-snoopers! Lock your disks and keep them private

COCKTAIL PARTY – Fancy a snifter? Choose your drink from our list of 600! Hic!



Side 2

MASTERSOUND 2 – Check this! Sample the delights of Microdeal's audio sequencer

GFA BASIC 2-TORIAL 2 – Eight programs for Part Two of our BASIC tutorial

FRACTAL PLANETS – Fed up with the world? Then design your own and give it a spin

DISK CACHE – Keeps track of your most-used data and speeds your ST into the bargain

TV TITLES – D'ya make Home Videos, guv? Now put real cinema-style credits on 'em!

LARGE, OR WHAT?

Well, yes. There is rather a lot of data on the Cover Disk. At *ST FORMAT* we use special techniques to turn big, overweight files into lean, compact ones. This month we have a record 31 programs on the disk – more than any other magazine, ever, prob'ly! And that doesn't include the document files accompanying most of these programs, packed with more info, hints 'n' tips from the programmers themselves.

ON THE SIDELINES

The *ST FORMAT* Cover Disk is specially prepared to enable all ST owners to read Side 1, even the poor devils with old-style, single-sided STs. These almost obsolete machines can't normally read double-sided disks, but we at *FORMAT* like everyone to know what's going on. Nice, no?

ALL YOU NEED IS HERE!

Thanks to the non-standard, blimey-oh-riley, disk format by *ST FORMAT*'s favourite techno-genius, Rob Northern, everyone can load and use *Turrican 2*, the Auto Collection, Ocular and the Cocktail Database. Double-sided drive owners are even better off, for they can also access *MasterSound 2*, the *GFA BASIC 2-Torial-2*, *Fractal Planets*, *Cold Hard Cache* and *TV Titles*. If you can't, better see page 48...

DOING THE DOUBLE

To read Side 2 with a double-sided drive just double-click the left mouse button on the folder named *SIDE_2*. It should open up like a normal folder, listing all the files contained within. If it doesn't, see below.

IS YOURS A BIT ONE-SIDED?

If you have a single-sided drive and try opening the *SIDE_2* folder, you see an alert message telling you the data on the disk may be damaged. This is just the ST's way of telling you it can't read Side 2. Don't fret, just click on *CANCEL*, see page 48 and then read the adverts to find out where to get your machine upgraded.

TAKE YOUR VIRUS MEDICINE

Before you boot the baby, back it up! Accidents happen and you could lose the lot, so write-protect the original disk before you even put it in your drive, then make a copy of it. Write-protect the copy too, to stop it picking up dangerous, data-damaging viruses from other disks. Do it!



TURRICAN 2

BY: RAINBOW ARTS

SIDE: 1

MACHINE: ALL COLOUR STs

FOLDER: TURRICAN

FILES: TURRICAN.TOS

This fully-playable demonstration shows off *Turrican 2*, the scorching new shoot'em-up from Rainbow Arts. The complete game (which you'll have to buy, of course) contains twelve levels, set on five different worlds. The graphical style of each world is different, as is a vast proportion of the gameplay itself. The first two levels, occurring on World One, feature you rushing across an alien landscape in the open air, armed with your amazing flamethrower. Challenges you have to meet include a wind which blows

you backward, waterfalls which push you down, walker aliens (which squeak when you jump on them) and leaping monsters that bring the stalactites crashing down.

World Two has an alien-style background and is set half in the air and half underwater. No whips or flamers here – just lotsa swimming! World Three transforms into a three-level Techno world, with you in a spaceship, flying across the scrolling horizon. World Four is full of blocks and boulders which do all kinds of nasty things like crushing you or exploding. Your job here is to cut a passage through, so you can make it to World Five. There you find a huge alien-style panorama, which you must traverse,

before reaching a vertically-scrolling shoot'em-up section. Conquer this and – guess what? – there's an absolutely gi-normous end-of-game nasty waiting to immolate you.

STARTING OUT

Simply double-click on the folder *TURRICAN* to open it, then double-click on the file *TURRICAN.TOS*. The game loads and runs, transporting you instantly to World One.



■ Armed with your trusty flamethrower, you battle your way through hordes of unspeakable gribblyies in *Turrican 2*, this issue's Cover Demo



MASTERSOUND 2

BY: MICRODEAL

SIDE: 2

MACHINE: ALL COLOUR STs

FOLDER: MASTERSO.UND

FILES: MAS2DEMO.PRG,
MASTER.SEQ, READ.ME

MasterSound 2 is a full-blown audio sampler, playback and sequencing package, which derives from a bit of software called (believe it or not) *MasterSound*. Its commercial form includes a sampling cartridge which slots into the ST's cartridge port and connects to a hi-fi, radio, record player or other noisemaker. You can then take samples of your favourite tunes, effects or speech and mix them together in any way you wish. The full version even

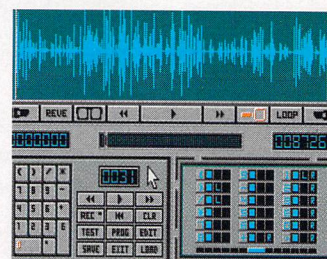
includes a hi-fi output so you can send your home-made sequences straight to your hi-fi speakers, rather than the ST's monitor. Using this mode, you can get near CD quality sound!

STARTING OUT

In this slightly cut-down version – which can run on all colour STs in low resolution – there is no save option, and obviously no cartridge, but you can still hear *MasterSound* in action. Double click on the file *MAS2DEMO.PRG* and the sample-editing suite loads into memory and displays a title picture. Press a key or mouse button and you move to the actual control panel where you see an oscilloscope-style trace across the top part of the screen. This is the demo sample, which you can cut up and play about with to your heart's content.

To hear the supplied sequence, you must first reset the sample

speed to 6.2 kHz. Click on the buttons to the left or right of the window where it says 12 and the number should change. Set it to 6.2 and then click on the button marked *SEQ*. The screen display changes a bit and several new buttons appear. Just click on the right-pointing arrow underneath the thing that looks like a tape counter and the sequence begins to play. Turn up the volume on your ST's monitor and get on down, er, dudes!

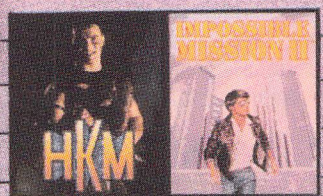
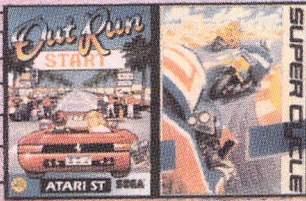


■ Become a Rebel MC using the sample editing and sequencing abilities of *MasterSound 2*

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COLD HARD CACHE v3.5

BY: ROBERT E OWENS III

SIDE: 2

MACHINE: ALL STs

FOLDER: CACHEV3

FILES: CACHEV3.PRG,
CHCSTAT.PRG, CACHEV3.DOC,
CHCSTAT.ACC, CHCSTAT.RSC

Cold Hard Cache is an easy-to-use disk caching program that works with both hard drives and floppies. Caching improves disk Input/Output speed by keeping the sectors you use most frequently in RAM.

Benefits of caching include:

- Faster disk operation. The I/O speed of a cached drive is between that of a RAM disk (very fast) and the uncached drive (much

slower than a RAM disk).

- Longer life for your disk drives.
- Longer life for your media.
- Less waiting on programs that grind your disks.

The drawback, however, is that the cache program and the sector buffers take up some RAM memory (about 20K minimum).

Cold Hard Cache is designed to be as small, reliable, and fast as possible. The program buffers Reads only. All Writes go directly to disk unless the sector is already in the cache and the data has not changed. This ensures that the disk's contents are current in case of a crash, power failure, or accidentally powering off the computer.

STARTING OUT

For complete details of *Cold Hard Cache*'s operation, read the document file *CACHEV3.DOC* for the programmer's instructions.



COCKTAIL DATABASE

BY: MICHAEL G FOOKS

SIDE: 1

MACHINE: ALL COLOUR STs

FOLDER: PAAAAARTY

FILES: COCKTAIL.PRG,
COCKTAIL.DOC, DESKTOP.INF,
COCKTAIL directory

Ideal for those wild parties you're bound to have, this program is a dream-bartender! It knows how to make the world's most exciting cocktails and lists exactly what you need in the drinks cabinet. It can be operated entirely by mouse, so you can hide the ST from drunken guests!

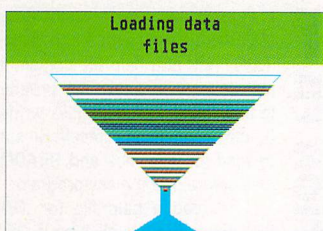
STARTING OUT

Just double-click on *COCKTAIL.PRG* and the program takes over. You can tell it what your basic drinks supply is like and it tells you what you can make. You can choose cocktails from a list, going for the most exciting names if you wish. Or you can choose your tippie by asking it to display only the cocktails which use a certain ingredient. If gin's your favourite, then it shows all the mixes which contain gin; if whisky makes you frisky, then it shows just whisky galore.

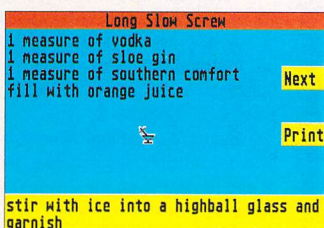
There's even a host mode, which enables you to create your own cocktails (gently does it, mind) and store them in the database as well. You can modify existing brews, too, toning them down or

beefing them up depending on the state of your hangover. Read the file called *COCKTAIL.DOC* for the programmer's instructions on the operation of both the guest mode and the host mode. Then open up your drinks cabinet, get the shaker and your lemons out (and olives, if you like), pop a high-ball glass on the sideboard and get to it!

ST FORMAT wishes it to be known that we've tried every cocktail (purely for safety reasons, you understand), and they're mostly harmless. But we can't be responsible for any damage you do to your machine when you're out of your skull!



■ **What's your poison? The cocktail database has more than 600 drinks for you to create. Trebles all round?**



■ **The drink everyone talks about but few can manage. Now you know how it's done, how about a Harvey Wallbanger?**



THE AUTO COLLECTION

BY: VARIOUS PD

SIDE: 1

MACHINE: ALL STs

FOLDER: AUTOS

FILES: see below

ST FORMAT presents ten special programs to make waking up your ST a happier, easier affair. They're all meant to accompany the AUTO Folder feature on page 105, so turn there for the full picture on how to use them and what they're for.

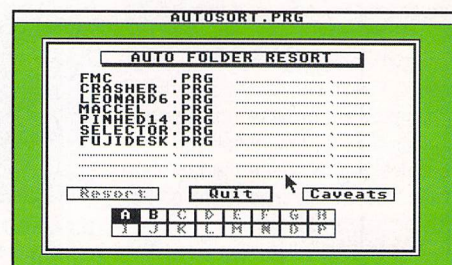
What we've got for you is listed in the box below. All these programs come complete with document files (ending in .DOC or .TXT) which you should read in conjunction with the AUTO feature on Page 105. *AUTOSORT.PRG* is an extra program designed to help you create an AUTO folder which contains all the programs you actually want to use. To make it work, you simply double-click on it.

STARTING OUT

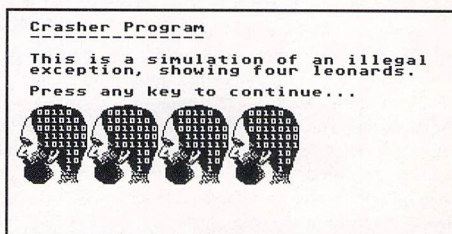
As they stand at the moment, none of these autobooting programs works until you re-copy them to a folder called AUTO. We've called the folder AUTOS here, specifically to stop them being read in at boot up. When you use them, the first thing you need to do is take all the programs out of their sub-directories and make sure they are

all listed as .PRGs when you open the main AUTO folder.

Accessories *must* be copied to a blank disk, and saved to the root directory – that is, not inside any folders. To load them into the ST, just press the reset button while the accessory disk is in the drive. Your ST searches for any accessories and loads up the first six that it finds. To activate them, move the pointer to the Desk menu at the to left hand corner of the Desktop (or subsequent GEM pro-



■ **Using AutoSort you can rearrange the files in your AUTO folder so that they run in whatever order you choose**



■ **Replace the Atari bomb symbol with these radical Da Vinci heads and system failures will never be the same again!**

gram). Just choose the accessory you want to use with the mouse pointer.

Remember that you can't double-click on an accessory like you can on a normal program, and the ST can hold only six accessories in memory at once. The usual method of de-activating accessories is to change the .ACC suffix to .ACX or similar, so choose the ones you like best and change the names of the others using the Desktop's "Show Info" menu option.

THE AUTO PROGRAMS ON THE COVER DISK

Folder Name	Contents
AUTOS	AUTOSORT.PRG, TIMEDRV3.PRG
FMC	FMC.DOC, FMC.PRG
FUJIDISK	FUJIDISK.PRG, FUJIDOC.TXT, FUJIMATE.ACC
LEONARD	CRASHER.PRG, LEONARD6.PRG, LEONARD6.TXT
MACCEL	MACCEL.DOC, MACCEL.PRG, MACCEL2.PRG, MACCEL2.TXT, MACONFIG.PRG
MONO_V5	MONEMU.DOC, MONO_EMU.PRG
PINHED14	PINHED14.NET, PINHED14.PRG, PINHED14.TXT
SELECTOR	SELECTOR.PRG, READ_ME.TXT
STARTGEM	STARTGEM.PRG, STARTGEM.DOC



FRACTAL PLANET

BY: RS KENNEDY

SIDE: 2

MACHINE: ALL COLOUR STs

FOLDER: FPLANET

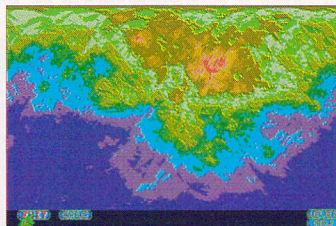
FILES: FPLANET.PRG,
FPLANET.DOC, FPLANET.RSC

The world of fractals is a fascinating place. Since Benoit Mandelbrot's initial discovery of this twilight world of nature-inspired patterns and self-replicating images, a great deal of research has been done. This excellent program runs on any colour ST in low resolution and enables you to create fractal maps with little or no experience of the mathematics involved.

Read the .DOC file first. The program is all mouse-operated. You

can create a fractal map first, using a few preset (but alterable) conditions, and watch as the landscapes grow and evolve. When you're happy that the map you've created would make a good world, you can remap the flat image onto a globe.

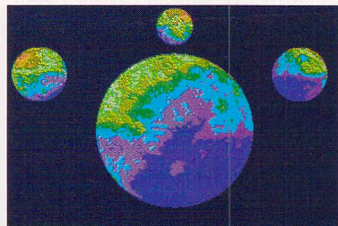
Once you have a globe created, there are still more things to do. You can spin your world in any direction, to various degrees, and save each picture as a Degas file. These can then be combined in an



■ **Fractal Planet enables you to create a flat map of an imaginary world and set up the contours...**

art package or an animation program (like DPaint or Cyber Paint) to produce short animated sequences showing the world rotating. The imagination boggles at the possibilities – pirate broadcasters might like to use this for a mock-up of the BBC world logo!

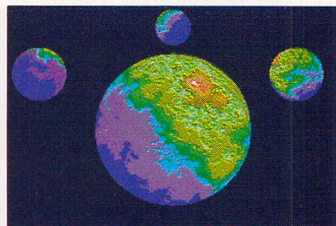
Even within the map section, there are oodles of options. You can set the number of re-draws that occur, making the map more and more detailed the longer you leave



■ **Then you can wrap the whole thing around a globe, to create a more solid, realistic world...**

it. You can control the sea levels and the contour lines which map out mountain ranges and flat plains. A simple slider can be moved up and down to affect each band of colour, enabling you to create watery worlds, flat deserts or jagged mountainous steppes. It's entirely up to you!

There's a guaranteed limitless supply of worlds to be made, and no two are the same. Creating with this makes God games seem dull!



■ **Then you can rotate your globes and save them as Degas picture files for animation purposes!**

BUT FIRST, BACK UP IN THE REAL WORLD

Because the oooh-it's-tight-in-here *ST FORMAT* Cover Disk is non-standard and squeezes in a whacking great 400K of data per side, the back-up procedure is not simple. Follow these steps, though, and you won't encounter any problems. Do it any other way and you could mangle your Cover Disk. Then where would you be?

1. Format a couple of blank disks (you may not get all the data onto one) – single-sided if you've got a single-sided drive, double-sided if you have a double-sided drive.

2.. Write-protect the original Cover Disk and insert it into the drive (if you

have two drives, you lucky devil, insert the Cover Disk into drive B). Double-click on the drive B icon to open a window showing the Cover Disk contents. If you haven't got a second drive, a message appears requesting you to put disk B in drive A. Simply click on OK.

3. Insert a freshly formatted disk into drive A. Double-click on the drive A icon to open up a window. You may be asked to insert disk A in drive A – you just did, so simply click on OK again.

4. Highlight each folder in the drive B Cover Disk window and drag them into the drive A window, one at a time.

5. If you have one drive, you're asked to insert disk A and disk B at regular intervals. Don't mix the two up! Disk B is the Cover Disk and disk A is the freshly formatted disk.

6. When you get a "disk full" error message, recopy the last folder – and subsequent folders – onto the second freshly formatted disk.

7. Double-sided owners, double-click on SIDE 2 once you've finished copying all the folders from side A of the Cover Disk, and copy those on side B.

8. Don't forget, the standard Atari disc copy function (dragging floppy A onto Floppy B) won't work, so don't try it.

THE DISK NEEDS YOU!

We need *your* software – games, utilities, demos – anything good, original and preferably short. If you've written anything worthy of the *ST FORMAT* Cover Disk (and remember, it's the ones we reject that makes ours the best), send it with this form and full documentation to: Neil Jackson, *ST FORMAT* Cover Disk Editor, 30 Monmouth St, Bath BA1 2BW. Allow four weeks for a reply.

Name _____

Address _____

Daytime 'phone _____

Program title _____

Size of files in K _____

What's so brilliant about it _____

Don't forget to: ■ Include on-disk and paper documentation ■ Write your name and address on the disk ■ Use a virus-free disk ■ Keep a copy of your program, because contributions are non-returnable

Please sign the following declaration: This program is submitted for publication in *ST FORMAT*. It is wholly my own work and I agree to indemnify Future Publishing against any legal action should copyright problems arise.

Signed _____

Note: we pay out up to £800 for contributions to our Cover Disk. But to earn that kind of dosh, of course, you'd have to write something pretty spectacular, original and complex.

READING DOCUMENTATION FILES

In virtually every folder on the Cover Disk there's a file with the extension .DOC. This is a help file containing instructions on using the program in that folder, in most cases written by the programmer himself. Be sure to read all help files and README files before running any program.

To read a help file (or .DOC file), simply double-click on it. Click on CANCEL if you decide you don't want to read the file; click on PRINT to send the document to a printer; click on SCREEN to send the text to your monitor.

After each screenful of text the display halts. To scroll up one line at a time, press <Return>; to scroll up a complete page, press the Spacebar; to return to the Desktop, press Q or <Control>-C.

Future Publishing cannot be held responsible for improper use of any programs on the Cover Disk or for any damage resulting, so if you end up wrecking your entire disk collection because you fail to read a help file, it's your problem, tough luck, too bad, etc. Just follow the instructions and you'll be okay.



GFA BASIC 2-TORIAL-2

BY: JAMES BESWICK

SIDE: 2

MACHINE: ALL COLOUR STs

FOLDER: BASICTUT.002

FILES: see below

Part Two of *ST FORMAT*'s BASIC Tutorial kicks off this month with eight BASIC programs for you to play with. Turn to page 145, where James Beswick explains the programs and tells you more about programming your ST.

To use any of these programs you must have a copy of *GFA Basic Version 2*, which was yours

BASIC Programs

DEMOUSE.BAS
DEMO2.BAS
IF_ENDIF.BAS
MOUSE.BAS
PUTGET.BAS
VSYNC.BAS
POINT.BAS

BASIC Data

GFADEMO.P1
PUTGET2.DAT

free on Cover Disk 19, last issue. (If you missed that, turn to page 136 for the *FORMAT* Back Issue service.) It's no use clicking on these programs or trying to load them into another BASIC package – they're very unlikely to work.

All these run on any colour ST in low res. You are strongly advised to copy them over to a spare disk, so you can modify and re-save them without danger of corrupting your original Cover Disk. Why not build a library of the *GFA Basic* demos as you go?

MEGATRAVELLER 1™

THE ZHODANI CONSPIRACY

TAKES SCIENCE FICTION
ROLE-PLAYING LIGHT
YEARS FORWARD!

The four legendary Frontier Wars have passed, each started by the Zhodani and each ending in a shaky peace....



"Heralded The American Computer Role-Playing Game of the Year!"

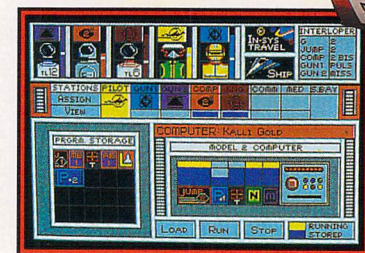
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ATARI ST • COMMODORE AMIGA
IBM PC & COMPATIBLES

BASED ON
MEGATRAVELLER
BY GAME DESIGNERS'
WORKSHOP, THE WORLD'S
MOST POPULAR SCIENCE
FICTION GAMING SYSTEM

VERSATILITY

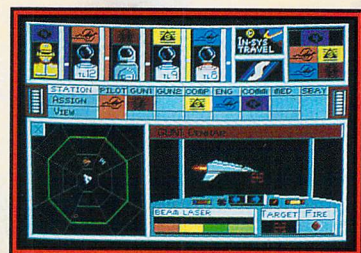
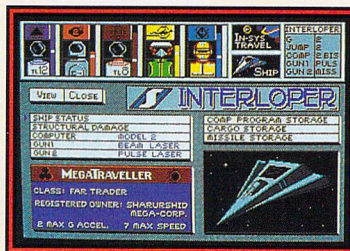
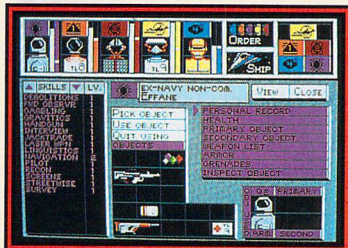
The most sophisticated character generation system ever devised: five military classes, more than 70 talents and abilities. Allows player to control character development through 5 services: Army, Navy, Marines, Merchants and Scouts.

.....Now with the help of corrupt Imperium officials the Zhodani and the Outward Coalition are planning a fifth. Smuggling arms to traitorous groups within Imperium borders the Zhodani are planning to strike from within.



IMAGINATION

Flexible gaming system supports any playing strategy and allows multiple solutions to problems and obstacles.

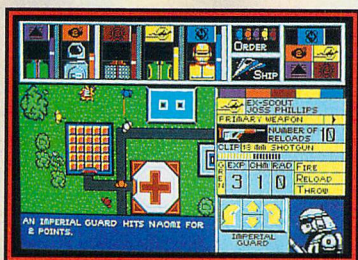


COURAGE

28 planets and satellites to explore in 8 systems filled with exciting puzzles, dangerous subplots and interesting characters to encounter.

RESOURCEFULNESS

Saving the universe costs money: a detailed bartering system lets players earn Imperial credits through interplanetary trading, with 30 types of cargo.



SCREEN SHOTS TAKEN FROM IBM PC VERSION

Supports Ad Lib Music Card and Real Sound for state-of-the-art musical score, digitized speech and realistic sound effects.

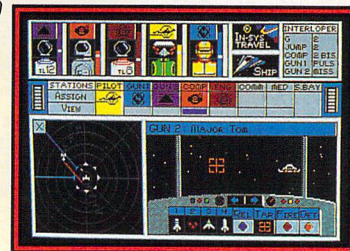


FIREPOWER

Realistic, combat sequences let you control each of your characters individually, while still giving general combat orders to the other members of your party. Utilise more than 30 weapons and skills in this advanced combat system.

"MegaTraveller 1, a game that truly warrants the highest level of praise, the attention to detail makes it exceptional!"

72 varied skills to learn and use including medical, piloting, communications, laser weapons, bribery, demolitions and handgun.



"MegaTraveller 1 is one of the finest role-playing computer games in at least the last three or four years."

"MegaTraveller 1 is one of the best science fiction role-playing games ever for the computer."

QUOTES TAKEN FROM DRAGON MAGAZINE U.S. & QUEST BUSTERS MAGAZINE U.S.

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TEL: 0268 541212



TV TITLES

BY: JP DZIEL

SIDE: 2

MACHINE: ALL COLOUR STs

FOLDER: TV_TITLE

FILES: TV_TITLE.PRG,
TV_TITLE.DOC, DEMO.PC1

If you're a home-movie or video buff, then you've probably wondered how to make your holiday footage look more professional. We all know there's nothing worse than watching Aunty Flo getting her beach girdle on, or seeing your little brother drop his ice-cream on the dog's head (again and again and again...). Well, sadly, *ST FORMAT* can do nothing about the quality of your dad's directing, or the long, melodramatic pans across wide-open nothingness – that's up to you. But we can at least give credit where credit is due, and that's what *TV Titles* is for.

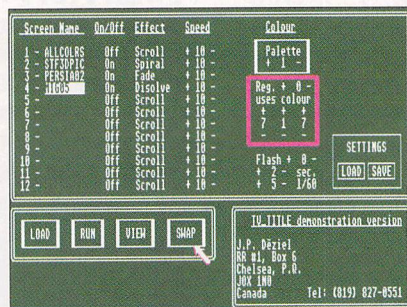
Using this demo version of the program, you can create truly professional-looking credits, with the cast list, the name of the director, the location of the shoot – anything you like, really. Using a standard art package, like *Degas* or *DPaint*, you simply write whatever you like, wherever you like on up to 12 screens. Save these out as .P11 low resolution *Degas* piccies and then run *TV Titles*.

You can then set up the scrolling rate of your credits, so they move gently up the screen like they do on a proper movie. You can display a test card, or even include a

few special mixing effects like a dissolve or a spiral pattern. These are output via the normal monitor and TV display, but if you connect the monitor output to a video recorder (using a suitable lead like the one demonstrated this issue in *DESKTOP*, starting on page 130) you can save these sequences on videotape. Then you can go off on holiday, with the credits already "in the can."

STARTING OUT

Further information is contained in the *TV_TITLE.DOC* file, and there are a couple of demo screens to get you started. If you're at all interested in making your own videos, there's tons of potential for this program. However, the first person who makes a Radion commercial with it gets a visit from Our Ed and his ugly stick – there's only so much a sentient lifeform can take!



■ The *TV Titles* control panel is where you can set the type of fade, the scrolling speed and which frames to use for your video credits and titles



■ Because of interference, this test card's caption has been lost. Normal service will be resumed as soon as possible. Meanwhile here's some music

DIDN'T IT WORK?

In any disk duplication as earth-shatteringly large as *ST FORMAT*'s, it's possible that a tiny proportion of disks might be faulty. If you're sure your problem isn't just that you're trying to read the programs on Side B with a single-sided drive, please accept our apologies. You're guaranteed a replacement if you send your disk with a SAE to: *ST FORMAT* March disk returns, Discopy Labs, Unit A, West March, London Road, Daventry, Northants NN11 4SA.

Do not send it to any other address. Only Discopy Labs can replace your defective disk. We have no spares ourselves and are so busy putting together the top *ST* magazine ever that we haven't got the time, energy, or sanity left to be able to help. Sorry.



OCULTAR PASSWORD

BY: CARL J HAFNER

SIDE: 1

MACHINE: ALL STs

FOLDER: OCULTAR

FILES: OCULTAR.DAT,
OCULTAR.DOC, OCULTAR1.PRG,
OCULTAR2.ACC, OCULTAR.RSC,
QUIKTIPS.DOC, REGISTER.DOC

mainframes have some sort of password system – and that's what *Ocultar* creates for your ST.

The system consists of two main programs, one which lives in the *AUTO* folder and asks you for a password, and one which runs as an accessory, storing your chosen passwords invisibly on the disk. If the first program doesn't get the right response – that is, if the snooper types the wrong password – the Desktop does not appear.

You create your own password when you start, and this can be modified if you think you've been rumbled. Each disk in your collection can have a different password (providing you can remember them all). The smart thing about *Ocultar* is that it securely locks only the disks you choose. Your snooper can still use the ST to load files from unprotected disks. For better security you'd have to nail your drive slot shut!

Worried about the security of your data? Sure that your mum hasn't secretly been looking through your Little Black Database? Can you guarantee your mailing list conforms to the Data Protection Act by being secure?

If you need a lock and key for private files, *Ocultar* is for you. It can keep the most prying eyes away from your personal data, by locking them out at the beginning. Most high-powered

LOOK AT IT FROM BOTH SIDES

Unsure what this talk of single and double-sided drives is all about? Most STs have double-sided drives. All STEs, 1040s and Mega STs have double-sided drives. It's only the earliest 520STs which came with singles. Here's a quick way to check if you're still not sure.

1. Turn off your ST for a good 30 seconds.
2. Write-protect the Cover Disk (that is, move the little tab so you can see through the hole in the corner) and insert it in the drive.
3. Switch on and wait for the Desktop to appear.
4. Double-click on the Disk A icon and you see several folders appear.
5. One of these is called *SIDE_2*. Double-click on it. If another group of folders appears, you can breathe easy – you've got a double-sided drive. If instead you get the message "Data on Drive A may be damaged," this doesn't mean you've got a duff disk, it means you've got a single-sided drive and can't access the programs on Side 2.

But fear not! You don't have to miss out! You can get hold of the B-side of this issue's Cover Disk by sending your name and address along with a cheque or postal order for £1.75 to: March B-Side Disk, *ST FORMAT*, 30 Monmouth Street, Bath Avon BA1 2BW.

You belong to a very exclusive club, you know, and because there aren't so many of you we tend to save your B-sides to do in batches about once a month. So if you send us a request, please wait patiently for at least 30 days. Remember, all things come... er, eventually.

Oh no, not again! Well, it's a fair cop, I'll come quietly

COVER DISK HOTLINE

0225 442244

WEDNESDAYS (2pm to 6pm)

Flummoxed by files? Dumbfounded by disks? Perplexed by Cover Disk programs? If you have a problem with the disk – and you're sure there is no corrupted data – phone 0225 442244 between 2pm and 6pm on Wednesdays with your query. Ask nicely for *ST FORMAT*'s Cover Disk Hotline and in short order you'll be through to our Disk Editor or one of his handy helpers.

Before you call have ready the info we need to help you: the model of your machine; the version of GEM/TOS you're using; and details of anything you've got attached to (or plugged inside) the computer. Have the disk handy and your ST up and running, and a pen and paper handy to take any notes.

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Soft-Logik is now distributing PageStream in the United Kingdom. In order to service you better, we will soon be opening our new company in London, Soft-Logik Publishing Limited. PageStream retails for £149.00 inc. VAT.

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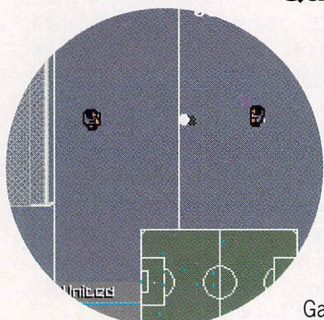
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VISA

screenplay

Quick, batten down the hatches before they get you! They're out there, you know – beat-'em-ups, shoot-'em-ups, follow-ups and flight sims – even Gazza (again!) – all on the loose, uncaged. What you need is this month's *FORMAT* guide to wildlife...

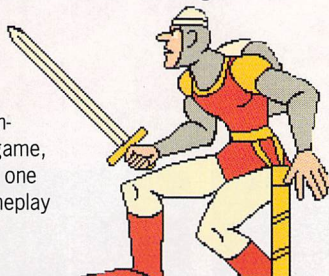


GAZZA 2

Gazza gets his nose fixed and dares to show his face on the pitch in this follow-up to the original *Gazza*, Empire's first pathetic attempt at a footy game. Find out whether this one's a likely *Kick Off*-beater **page 57**

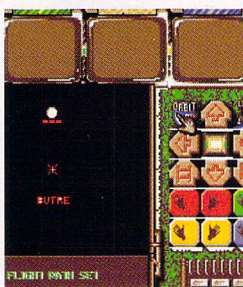
DRAGON'S LAIR 2

Get out your rolling pin, beat your mother-in-law to a pulp and make off with her daughter. Gob-smacking animation abounds in Readysoft's latest cartoon-style action game, but does this one have the gameplay to match? **page 68**



CAPTIVE TIPS

Whether you're lost in a wet tunnel or desperately seeking an alien named Susan, programmer Tony Crowther helps you through your worst *Captive* nightmares **page 88**



NIGHTSHIFT

You take on a part-time job at the local factory and get more than you bargained for in Lucasfilm's mindbending puzzle game. Before you know where you are you're producing dolls of all your favourite Lucasfilm characters **page 62**

SCRUTINISED THIS MONTH



■ The *FORMAT* team of experts includes experienced tour guides, taxonomists, taxidermists and taxi drivers – everything you need for a successful safari! Under their microscopes this issue are:

ADVANCED DESTROYER SIMULATOR	77
CRIME WAVE	78
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GAMEBUSTERS	85

THE STF RATINGS SYSTEM

● It is *ST FORMAT* policy wherever possible to review only finished games – that is, the games you could actually buy in the shops – not incomplete or demo versions

GRAPHICS: A score out of ten for the quality of visuals and animation, including how big and colourful the sprites are, how smooth the scrolling is, and so on.

SOUNDTRACK: (out of ten) Sampled sounds are realistic and rate highly but ST sound chip noises tend to send your eardrums convulsing

INTELLIGENCE: (out of ten) How clever do you need to be to tackle the game? Puzzle and strategy games should be tough; few shoot-'em-ups are mentally taxing

INSTANT APPEAL: (out of ten) You take the game out of the box and drop it in the drive. How well does it draw you in? How easy is it to get into?

LONG TERM INTEREST: (out of ten) You've had the game for a couple of weeks. Is it covered in dust, in the bin or still in your disk drive?

OVERALL: (a percentage) Terrific graphics and wonderful sound make a game look hot, but they don't make it great. The overall score comes after joint discussion between the *FORMAT* reviewers and depends on the quality of the gameplay and its long-term appeal

MiG-29

Hold your breath, grip the yoke and prepare to re-visit your break-fast in this macho mega-blast flight sim. The MiG is the best designed aircraft in the world but it calls on all your skills as a pilot to fly it – have you got what it takes to put it through its paces? **page 52**



ENCHANTED LANDS

Control an athletic wizard in his mischievous bid for world domination. This cutesy scrolling arcade adventure comes from an ex-demo writer who shows he really knows his stuff **page 70**

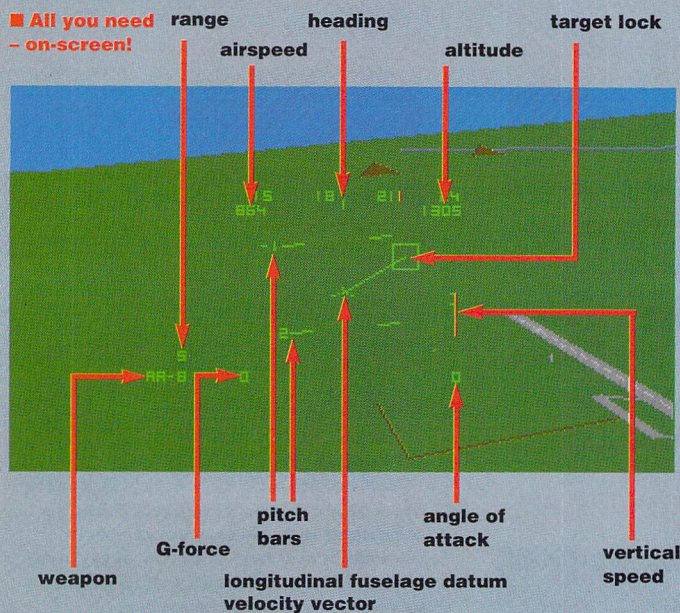


METAL MASTERS

Arm-wrestling's tedious, boxing's a bore and karate's a wimp's game. To be a real man, first have your limbs surgically replaced by hydraulic steel replicas, then enter your name in the *Metal Masters* championships **page 64**

ALSO ON TEST THIS MONTH: Bug Bash ■ Cosmic Pirate ■ Dick Tracy Hostages ■ Maya ■ Multi-player Soccer Manager ■ Rotor See page 81

HEADS UP! READ THAT DISPLAY!



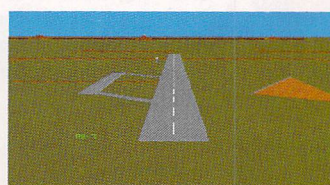
In today's world of modern warfare, secrecy is paramount. It's unbelievable, then, that last year's Top Secret is this year's computer game. Neil Jackson takes air superiority to ridiculous heights and captures an enemy plane....

DOMARK £34.99

MiG-29



1 Staring blankly down the short runway, you reach tentatively for the throttles



2 In seconds, you're airborne, looking over your shoulder at the fast-receding ground



3 An unexpected target pops up on radar: lock on with air-to-ground homing missiles

SECRET CLASSIFIED INFORMATION TOP SECRET CLASSIFIED INFORMATION



MiG-29 is the result of two years of intensive work by Jonathan Newth and Dave Payne, the game's designers. To them fell the task of gathering as much MiG information as possible and then double-checking, cross-referencing and finally incorporating it all into a flight sim "engine" which had already been created for an earlier program. This might seem like an incredibly difficult and perhaps dangerous task, but it was simple enough for the two designers – their team SIMIS has previously been responsible for a number of real flight simulators for British Aerospace, so it was easy enough for them to obtain a lot more data

on both aerodynamics in general and Fulcrums in particular. After designing the system and writing it on the PC in a high-level programming language, the team worked with Paul Stein to produce the ST version over another 22 weeks.

Jonathan Newth spoke *exclusively* to *ST FORMAT* and passed on some of *MiG-29 Fulcrum's* less obvious tips, foibles and tactics.

1. There are two sets of *MiG* flying characteristics – the simple model and the real aircraft model. What's the difference? The simple mode is more like other flight sims. It gives a generally correct response by using special condition tables to produce

With the recent events in the Gulf, flight simulations have a bitter-sweet taste right now. Quite remarkable, then, that Domark's new flight sim should be based on the plane which has for so long given the West the jitters. The Mikoyan Guryevich (MiG) Design Bureau produced the USSR's most fearsome fighter, the 29 (code-named *Fulcrum* by NATO), and for a long time no-one this side of Moscow knew what it could do, or how fast.

Now, things are a bit different, but no less worrying. The onset of Glasnost has meant that the Soviets are less tight-lipped about the MiG-29 and its stablemates. We now know that the *Fulcrum* is a highly capable, surprisingly dangerous plane – and we also know that the Soviets sold plenty of them to Iraq (during the eight-year Iran-Iraq war).

So you could look on Domark's *MiG-29 Fulcrum* as either an intelligence-gathering exercise or just a

computer game, whichever you feel happier with. For now, let's leave the politicians to get reality back in shape, while we examine the fantasy.

MiG-29 Fulcrum depicts you as a Soviet pilot, at the start of your training with the stalwart machine. The simulation provides a whole training arena, which has a target bombing range, a lake with floating and static targets and a small runway which produces an endless supply of Shenyang fighters for you to eradicate. You can continue to train until you decide you're ready to take the risk of hits. If you happen to "buy the farm" during your training, a new plane appears on the runway instantaneously and you can take off again. No such reincarnations in combat missions, however – failed missions must be redone from the start.

The MiG-29 is an easy plane to get to grips with, and is a dream to fly. Beginners should learn to fly in the sim's simple mode, rather than

approximate handling characteristics. However, fly outside the flight envelope and the plane is not guaranteed to respond exactly the same as a real MiG would.

The real aircraft model takes into account all the flight surfaces – wings, fuselage, flaps, gear position, rudder, etc – and works out, in real time, how various forces act on them. Altitude, velocity, angle of attack, centre of gravity, acceleration and torque are all calculated, and the plane responds exactly as it would in real life.

2. Enemy planes have realistic flight envelopes and they will not exceed them. For example, Harriers VIFF (vector in forward flight) by directing

their thrust nozzles forward while flying, and they land and take off vertically. They're tough to beat, but not impossible.

3. Unlike in other sims, the enemy craft in *MiG-29* have finite weapons resources and you can use this to your advantage. Harriers have only two air-to-air missiles each, while the other planes have four each. Each enemy carries 250 rounds of cannon ammunition – and uses it if you get too close.

4. Your aggression factor is considered in the early missions. If you hide below radar range and don't attack aircraft before you reach the target, the enemies try to simply

its advanced counterpart, since the latter computes aerodynamics to an incredibly realistic level. This can be confusing if you haven't been told what to expect in true flight – lift is more elusive, for example, and more care needs to be taken in turning. Similarly, there is a choice of control devices – the mouse, keyboard or joystick. Of these the mouse is the most responsive and accurate – and it leaves you a hand free for operating the many buttons “inside the cockpit.” Joystick mode comes a very close second, but is less attractive primarily because the Fire button works only the machine gun. To release missiles you need to hit the Spacebar, often causing a bit of scrabbling if you're holding the stick in two hands.

Once aloft, the MiG can be thrown around to a severe degree, with no trouble in recovery. It can ➤

MISCONCEPTIONS OR MISINFORMATION?

Up until July 1986, the western world had seen only a single, grainy image of the MiG-29, taken by an orbiting spy satellite. The plane had been in service since 1983, but its maiden flight was as long ago as 1977. After a long wait, the West finally got a good look at this top-secret fighter during an

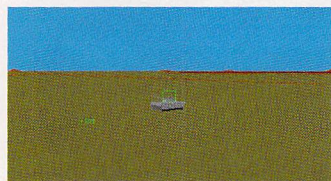
exchange visit with a squadron in Finland. The Finns had been using early MiG-21 technology for a while and the Soviets were interested in promoting sales of their all-new MiG-29, so, at last, the Fulcrum was unveiled.

The first casualty of the disclosure was the long-held belief that the Fulcrum was an inferior plane when compared to the western fighters. It's now known that the Fulcrum is a much more formidable opponent than it was first thought to be. It is at least as manoeuvrable as the F-16 Falcon, with better high-altitude performance. It can reach speeds of over Mach 2 and has an incredible rate of climb. Its armament systems enable the pilot to track and target enemy planes in any direction, at distances beyond visual range, without using his radar!

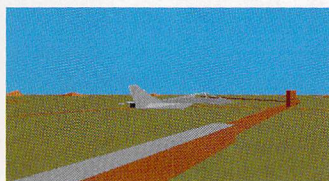
In the right hands, there's no doubt, the MiG-29 has the potential to be the best all-round air-superiority fighter in the world.

■ At the hands of pilot Anatoly Kvotchur, the MiG-29 Fulcrum is a versatile and dangerous beast.

fulcrum



4 The missile's nose camera shows it's a tank, possibly a T-72. Impact in mere seconds!



5 Low and fast, you steal into Chinese airspace, nipping straight over the top of the wall



6 Trouble ahead. A Shenyang Airguard scrambles from his home base, looking for you



8 Switch to the view through his window and you see yourself evading his advances

SECRET CLASSIFIED INFORMATION TOP SECRET CL

herd you out of the area. Attack them and they attack you.

5. Enemies have limited fuel as well as weapons. Loitering costs fuel, so you may be able to force an enemy



■ MiG-29 is the fruit of over two years' work by Jonathan Newth (left) and Dave Payne of SIMIS

to return home simply by wasting his time. Then you can bring him down as he tries to land – but make sure you can still get home, too!

6. Runways tend to generate aircraft indefinitely, so take them out at the earliest opportunity or you may never get any sleep.

7. A green target lock in the HUD sight shows a 30-40% chance of a hit. You're advised to wait for a red lock which shows an 80-90% probability. Enemies know if they're being locked and they break away if they can, so stick with it.

8. MiG-29 isn't quite true to life in one respect. Select autopilot on your

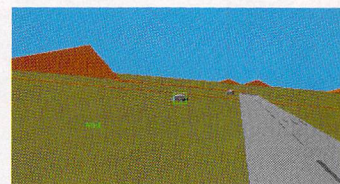
plane, lock on to an enemy aircraft, then press J and you can see through your enemy's cockpit window. It's a good way of working out how they manoeuvre to get you in their sights. Steal their tactics, because they work!

9. Similarly, you should use the enemy window view to see whether the enemy is approaching head to head with you. Be wary if he is, because a) he'll be firing cannon like crazy and b) he may run straight into you and kill you both!

10. Look out for secret targets which are not indicated in the mission briefing. If you can get a target lock on something – it's an enemy!



9 Turning hard, you bring yourself right onto his tail and begin to tear holes in his wings with your cannon-fire



10 Then it's on to his base, your target, to bomb his command centres. The missile view says it all – time to go home... Mission accomplished!

IT'S HARD TO BE A HERO WHEN YOU'RE ONLY 4'6"

Among other things, you'll need to:

- Sedate some piranha poodles.
- Burglarize the governor's mansion.
- Figure out whether the fat voodoo priestess will possess your rubber chicken, smelly fish, or your pack of breath mints!!

THE SECRET OF MONKEY ISLAND™

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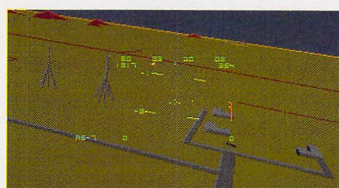
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even perform the tailslide manoeuvre it's famous for – a high vertical climb followed by cutting the revs, which causes the plane to drop backwards, straight down. Master the recovery here, and you're almost a professional. Mess it up and you're history.

When you've got the training in the bag, and you're sure you can cope with the relatively simple weapons systems, it's time to test your mettle under real pressure. There are five main missions, with the final mission set – rather chillingly – in the Middle East. You can embark on any of these missions in any order, except for the final mission, which you can only attempt if you have a score over 500 before you start. Points are scored for each target you hit successfully and for your safe return to base. During your career you fly a reconnaissance mission to identify a NATO submarine trapped in ice, an incursion into Red China over the Great Wall, an attack on a terrorist convoy, and carry out wholesale destruction of oil refineries, storage dumps and even a fast-breeder nuclear reactor!

En route, you're very likely to come across some form of enemy activity, usually another fighter. Sea Harriers, Shenyangs, Mirages and other (enemy) MiG-29s keep tabs on you constantly, waiting for the right moment to pounce.

Using the MiG-29's advanced in-helmet Head-Up Display (HUD), you can lock on to virtually any airborne target which is in range. The keypad keys select the view from the pilot's seat, and the <Return> key forces the missile systems to track any targets in the current view direction. You can then return to the straight-



■ Bearing down like fire from the sky, you hurtle towards a vast enemy base at terrifying speed

ahead view and bank over hard to pull in behind your opponent.

Armed with AA-8 Alamo missiles, your MiG is a worthy combatant, but missile release timing is critical. The familiar red target-lock shows your best chance of a hit, but most of your opponents require at least two good belts before they go down. As a last resort, you can use the built-in machine guns, but their range is limited to around one kilometre in the air. Flying at Mach 1 while firing bullets at a moving target is rather like dropping stones from the Severn Bridge onto a matchbox on the river

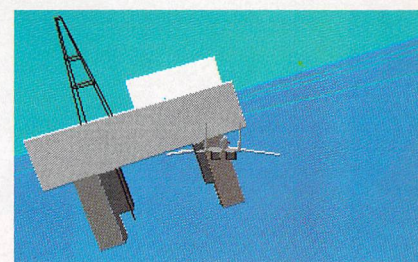
below – difficult to do, but immensely satisfying if it works!

EFFECTS

MiG-29 meets all the flying standards set by other flight sims and often surpasses them. In terms of control, it's as good as *F-19 Stealth Fighter* and *F-16 Combat Pilot* and far better than

Falcon, *Fighter Bomber* and *F-19 Retaliator*. However, it has less flashy front-end graphics than most and doesn't have nearly such an exciting missions section as *Stealth Fighter*. A few extras, on top of the basics, might have been a nice addition.

However, that doesn't mean MiG-29 isn't brilliant. The feeling of true



■ No sim is complete without an outside view. MiG-29's is fast but lacks information displays

flight is unsurpassed, even by *F-19 Stealth Fighter*. Absolutely every aerodynamic principle is covered, without making the plane unflyable. Real planes are not excessively difficult to fly, and sims shouldn't be either. MiG-29 shows that realistic physics can be applied to a game environment without making the whole thing slow or overly difficult.

Sound effects in MiG-29 consist of explosions, your ever-revving engines and a few warning beeps and tyre-squeals. Not amazing, nor appalling – they do the job, and little else is really needed. As for the music, the short intro tune is pleasant, but you're unlikely to listen to it more than once. This isn't because it's uninteresting, however; it's because you need to press the Spacebar to load the game, cutting off the tune in mid-flow.

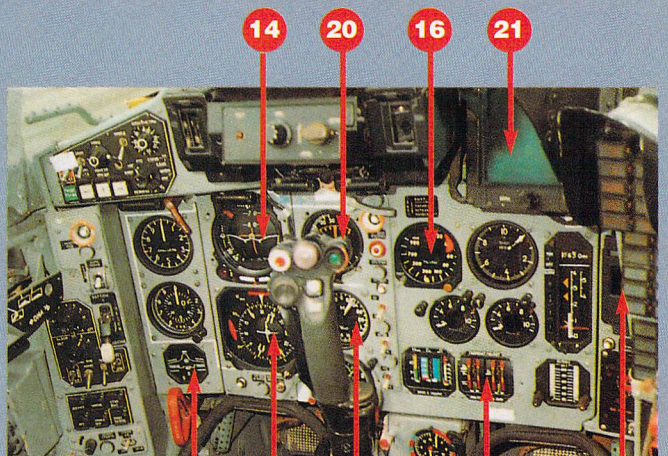
VERDICT

Buy *MiG-29 Fulcrum* and an excellent, unmissable flight sim is yours. The novelty of flying a Soviet warplane soon wears off, and before long you are unaware of whose side you're on, what the plane is, or anything other than staying alive and airborne. Fast, smooth vector graphics whizz by at the twist of the mouse and they are eminently controllable. It's this that makes MiG-29 so good. The missions are exciting and varied, even if they are a little "standard," but then most real-life missions are fairly similar anyway.

Most flight simulator aficionados are already reaching for their wallets, just at the mention of MiG, but for those of you who are considering your first flight sim, fear not. MiG-29 doesn't disappoint. It's an excellent, rewarding game for newcomers and old hands alike, and it's sure to keep your head in the clouds for a long time to come.

NEIL JACKSON

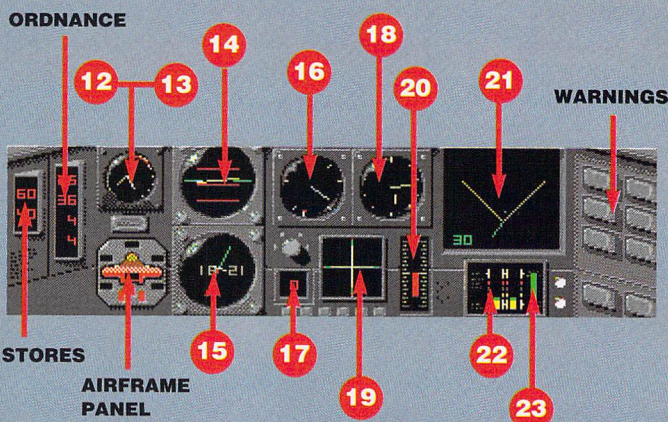
PUT YOURSELF IN THE PICTURE



AIRFRAME PANEL

WARNINGS

■ The real McCoy – an initially bewildering array of instruments, dials, switches and levers fills the small cockpit of the MiG-29



■ The simulation – the major instruments have made it to the game, but (thankfully) the less-needed displays are omitted

STORES

- 1 flares
- 2 chaff

ORDNANCE

- 3 cannon
- 4 S-240 rockets
- 5 AA-8 air-air missiles
- 6 AS-7 air-ground missiles

AIRFRAME PANEL

- 7 flight-mode: advanced/simple
- 8 airbrakes on/off
- 9 wheel brakes on/off
- 10 flap on/off
- 11 landing gear down/up

INDICATORS

- 12 angle of attack
- 13 G-force

14 artificial horizon

- 15 compass/nav
- 16 airspeed (km/h)
- 17 waypoint selected
- 18 altitude (metres)
- 19 controller position
- 20 vertical speed indicator
- 21 radar/infra red display
- 22 engines rpm
- 23 fuel

WARNINGS

- 24 hydraulics
- 25 nav system
- 26 radar
- 27 hud
- 28 altitude low
- 29 stall indicator
- 30 fuel low
- 31 auto stabilizer

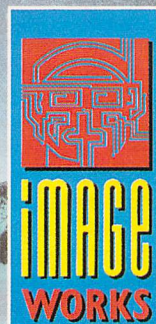
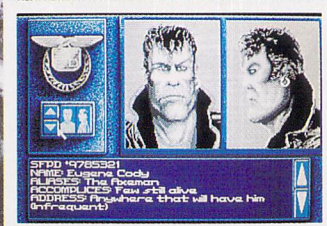
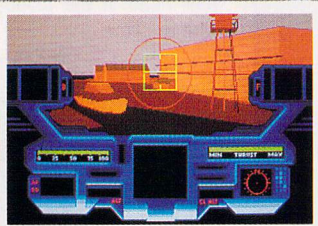
GRAPHICS	9
SOUNDTRACK	7
INTELLIGENCE	8
INSTANT APPEAL	9
LONG TERM INTEREST	9
OVERALL	92%

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Because of his ability to have a good cry on the football pitch, Gazza has become the new symbol of England in the '90s. Therefore it's not surprising that a software house is bringing out a licensed game in his honour.

Gazza 2 is an icon-driven football management and simulation game. You can pick from the 40 best teams in Europe and lead them into battle against the other sides. On the initial screen you can choose to have a quick game against the computer or another person, or enter the management section.

If you choose to manage, you enter your name and then pick a team. Now, you can concentrate on the serious side of management. You can move between three main



■ **Gazza 2 is a very realistic football management and simulation game – as Manager, Scout and Coach, your job isn't easy. Choose a team and lead them through the tribulations of tournament footy**

gazza 2

EMPIRE £24.99

sections at this point in the game, representing the Manager, the Coach and the Scout. Obviously these three people have different responsibilities, so you need to distribute your time wisely.

The Manager ensures there's enough dosh to keep the club afloat.



■ **I don't know if this is the right time to say this, but I actually can't stand football. I mean, give me rugby any day. Now that's a bit more like a proper sport...**

■ **Oh dear, now that wasn't a very nice thing to do, was it? He called you a big what? Let me near him, the skunk!**

He sees all the till receipts from the ground and if things get really bad he can take out a loan. Scouting is all about keeping an eye on the talent in other teams – on the transfer lists, for example. However, the Scout also has to check out the players who aren't on the list yet but might be with a little persuasion. The Coach trains the team so that they play



their very best. He also picks the side and promotes the promising talent from the youth squad.

Once the team is ready you can start playing a match. This is viewed from overhead and you play from left to right on a variety of surfaces. The kick controls are comprehensive with

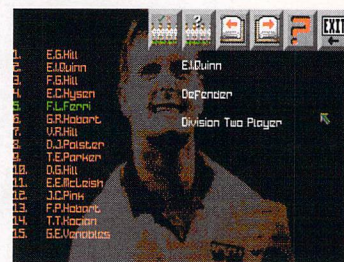
aftertouch, bends, chips and drives making it easy to control a player.

EFFECTS

Gazza 2 looks great. The icon management system is attractive even though Gazza always glares at you. The pitch looks a lot like *Kick Off* although you do play in the opposite direction. The players are also similar to *Kick Off's* chaps but they move more realistically: the animation and scrolling are excellent. Sound consists of meaty spot samples.

VERDICT

Gazza 2 is surprising fun and the pace of the football matches is much more realistic – there's plenty to



■ **Choose your side carefully. The first thing to do here is leave that chap at the bottom of the list on the subs bench**

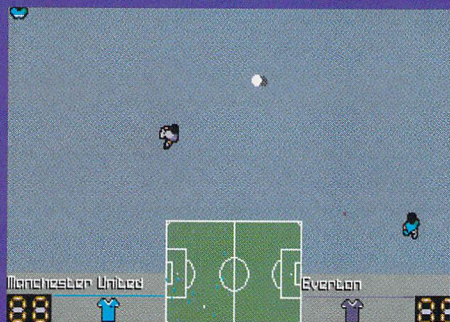
learn and improve upon. What's more, 16 people can play at once, thus adding to its appeal.

By now though people are fed up to the back teeth with footy games. Gazza 2 is fun, but it's also tremendously derivative – the programmers seem to have poached the best elements from the top footy games. If, by some freak of nature, you don't already own 17 football games then give it a try (hanky not included).

ANDY HUTCHINSON

GRAPHICS	8
SOUNDTRACK	8
INTELLIGENCE	8
INSTANT APPEAL	9
LONG TERM INTEREST	9
OVERALL	86%

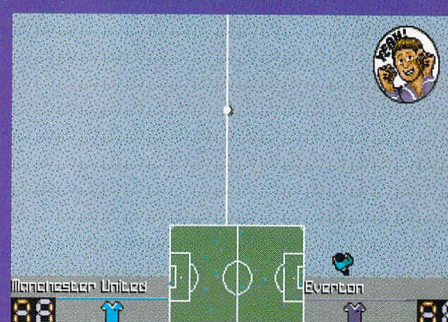
SELECT YOUR TEAM, TRAIN 'EM HARD AND GET ON THE FIELD!



■ **This is the match play screen, and it shows Manchester Utd giving a right royal thrashing to those nasty Evertonian oiks**



■ **"Well, that means we're off, Brian, and like I say, it's a game of two halves and at the end of the day the sun goes down"**



■ **Yesss! We've scored! Actually this isn't as easy as it might sound. The computer teams are mostly very good – all except Liverpool...**

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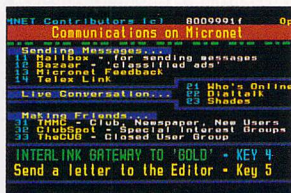
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total recall

Don't buy Arnie a book for his birthday, he's already got one. What he doesn't have, it seems, is his right mind. In *Total Recall*, following the plot of the film, you play a confused, angry and, to say the least, well-built character called Quaid. A humble building-site worker, Quaid is inexplicably haunted by lurid visions of the planet Mars. A visit to "Rekall" – a memory implant centre – goes horribly wrong and Quaid discovers he's living a lie.

The only clues to his real identity are the recurring theme of Mars and the unexplained yet frantic attempts of Richter, the Chief of Police, and his men to stop Quaid's progress. You must avoid or terminally perforate the enemy if Quaid's mission is to be completely successful.

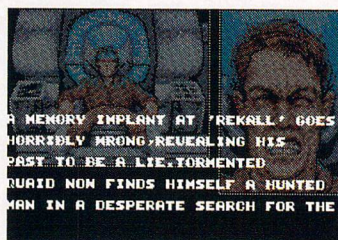
Total Recall offers you the chance to flex your pectorals as your bulging alter ego explores the six levels of bicep-pumping action. There are two basic elements in the gameplay: four levels of platform adventure and two levels of car chases.



■ Quaid contemplates the job ahead of him in this adventure/chase game version of the film: four objects to find and only ten bullets left...

In Level One, you must navigate your way around a complex platform maze. In order to get to Level Two you must locate and collect a passport, briefcase, ticket to Mars, disguise kit and a nasal sink-plunger. Other objects – guns, ammo and energy pills – are left lying about and help your progress.

In Level Two you find yourself in a Ford Transit van, weaving your way through some particularly heavy cross-town traffic. Level Three is back to the platforms for a race to a warehouse to the spaceport. Now safely on Mars, Level Four sees you having to fight through the sensuous Venusville in which you discover the woman of Quaid's dreams – Melina. Then it's back to the car sequence for Level Five

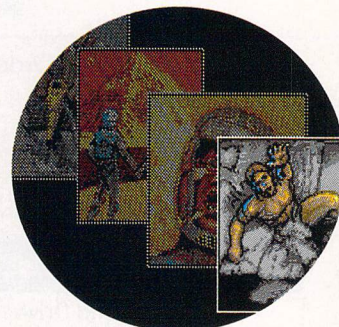


■ The effect of a visit to "Rekall" is similar to that of a heavy night on the town... only in reverse

in which Quaid, Melina and Benny le Taxi must burn rubber to get to the rebel hideout in time. On Level Six you're back on foot and ready for the final showdown...

EFFECTS

The animation is smooth and detailed with a lot of clever touches. The crouch, run, hit and fire routines in the platform levels have been done better before, but they are competently handled and have interesting additions to the basic format. The



■ Six levels of bicep-pumping, baddie-thumping, running, jumping action as Quaid tries to discover his true identity

pace of the action stays quick, but sound effects are run-of-the-mill, not adding to the overall atmosphere. Unfortunately, the car sequences are dreadful, another case of simply tacking on "a bit more" just for the sake of padding it out.

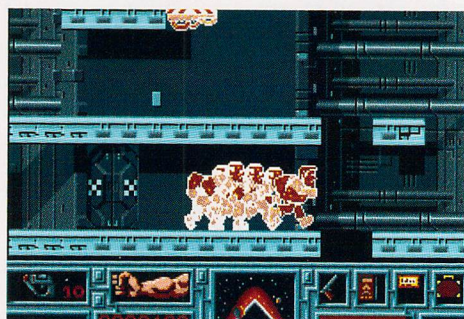
VERDICT

The "bullets fired" to "braincells required" ratio isn't quite as mind-boggling as in some games, but there's enough indiscriminate carnage to prove that Quaid is in no sense a '90s Man. Still, don't let the hackneyed gameplay put you off – the graphics really pull this game to a position above the common herd. *Total Recall* is a good beat-'em-up platform cum adventure game. It's nothing new, but if you're a fan of the film, give it a try.

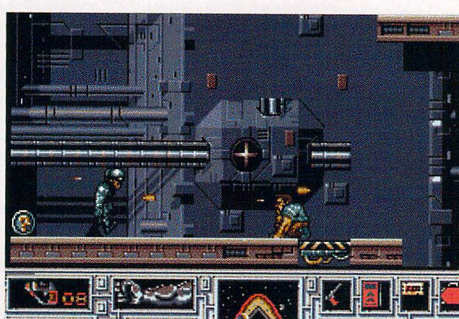
NEIL WEST



■ Should Quaid take that energy-reviving pretty pink heart or would all those nasty men laugh at him and call him a girlie?



■ He's the leader the pack. The baddies are about to fall for him – down the lift shaft



■ An exchange of bullets with the police. The cops around here are tough – they fire first



■ Cross-town traffic. Quaid's Transit van is armed with rocket launchers and a multi-gym

GRAPHICS	7
SOUNDTRACK	6
INTELLIGENCE	5
INSTANT APPEAL	6
LONG TERM INTEREST	6
OVERALL	66%

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metal masters

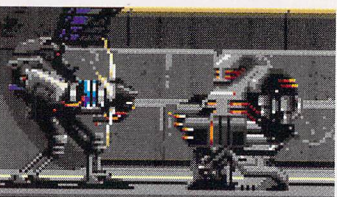
The year is somewhere far into the future. Nowadays it's not Christians vs lions the public clamour to see – it's giant robots fighting it out in glorious gladiator style for a bit of glory in the illustrious Robotop. If you thought Metal Mickey was fearsome, tell Auntie about the guys in *Metal Master* – they're big and mean.

You can either choose an established robot from the Robotop hall of fame or start afresh and customise your own. After choosing your robot, you enter an inventory screen showing the various bolt-on gadgets you can buy if you make enough dough.

Each piece of hardware has a particular strength and resistance to damage, and a status bar shows its current condition. As you fight, the general wear and tear on body-parts is indicated by status falling, and you must replace a part before its status falls to zero. This of course



■ Armed with a heavy mattock, you are about to deal your metal opponent a deft tap on the nut – or possibly the flange (fnar, fnar)



■ This time you're armed with an even deadlier laser field – it's that electrified propeller you can just see whirling into action

also costs money. Unfortunately, if you're just starting out you have to make do with the basics until you earn some cash. When you're returned to the inventory screen after each visit to the arena, you can also sell your current equipment as a way of making a fast buck, but you're bound to lose out since stuff depreciates after just one battle.

Once you've made your choice of weapons and gadgetry, you move on to the construction screen where you bolt your robot together. Fortunately, the game prevents you mak-

LOOK! THERE'S A BIG NASTY IN THE ARENA!

■ In this futuristic beat-'em-up, you must keep your eye on both the status icons *and* your foe

Score: Deal effective blows and your score rockets up!

Heat Indicator: This tells you when you're getting trigger-happy with your laser – if you're too keen, it can cut out at a critical moment



Damage Indicators: All these icons indicate the wear and tear on your body-armour and your opponent's. Watch out for those blows or inevitably end up on the scrap heap!

Time: You get a limited time to defeat your opponent. Fail and the one with the higher score wins

This is Big Nasty – and he's in no mood for the tango

You. Hurrah for Rorole! You're kitted out with the latest armour-plated legs and a very unfriendly Cleaver to boot

ing a fool of yourself here and you never end up getting into the arena with no legs or two heads.

Click on OK and the battle commences. You and your opponent enter the futuristic arena via two lifts, one on either side of the screen. For long range attack, press Fire and select either lasers or missiles using the joystick. The real fun, though, starts at close range. Here you can use all that gadgetry – Smashers, Cleavers and Claws, to name a few. You can guide your robot in all directions and even make it crouch to deliver its blows.

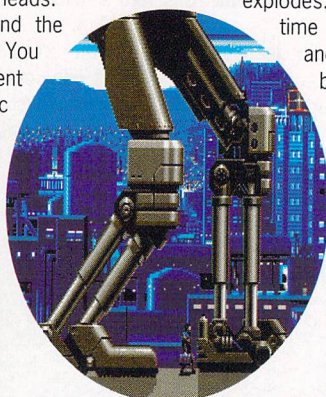
At the bottom of the screen, icons illustrate the location and extent of damage to your robot and

your opponent. When one icon shows complete damage, the robot explodes. Otherwise, there's a time limit for each battle and a scoring system based on the quality of the bout.

If you beat your opponent, you are returned to the inventory screen to spend your winnings and repair the damage. You can then fight another, more dangerous opponent. If you find the ST-controlled opponents too hard anyway, there's always the two player option.

EFFECTS

Metal Masters has beautifully animated graphics: the robots are dark and menacing, with fine detail. Each weapon has distinctive animation,



■ Part of the intro sequence. Phew! That robot's as big as a skyscraper! (Cue exaggerated amazement from audience)



■ On the Inventory screen you select your armaments, ready for each battle. Check the prices and the status of your robot and try to spend your cash wisely



■ In the lifts underneath the arena and you're ready – Cleaver and all – to face the terrible Big Nasty. Sounds like something you might find in the toilet...

from the hammering blows of the Cutter to the slashing of the Claw. The robots produce some nice hydraulic/metallic sound effects as they duel, and there are good chunky noises throughout the melee.

VERDICT

All the hi-tech battling in *Metal Masters* is tremendously refreshing to play and really addictive. It's all carried along by the superlative animation and gritty sound effects that get you instantly involved. With two players there's even more fun to be had, smashing each other up. *Metal Masters* is a brilliant beat-'em-up that's worth selling your grandma for.

DAN GOODLEFF

GRAPHICS	9
SOUNDTRACK	8
INTELLIGENCE	7
INSTANT APPEAL	9
LONG TERM INTEREST	8
OVERALL	88%



■ Level One: Cool! \$4,000 for the winner! But don't imagine that your foe, Radorator, is just going to give in – he enjoys slapping his opponents about too much

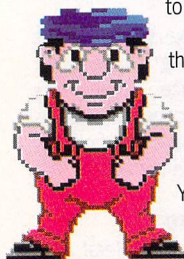
You know what it means to work hard on machines. It's difficult, it's tiring – but it's not boring. Not when you're doing the *Night Shift* at the giant Industrial Might and Logic corporation.

You play either Fred or Fiona Fixit and you've just been hired to tame the Beast – the large machine which churns out little Imperial Stormtrooper dolls as seen in the

“It's a six-screen-high symphony of pumping pistons, whirling wheels and flashing lights”

three *Star Wars* movies. Such is the demand for these (though why, God only knows) that the Beast runs all night. And it needs someone to supervise it through the small hours.

Your first task is to get the Beast's powerplant working. This involves pedalling a stationary bicycle connected to the electric system. Then you must whip out a match from your little toolbag and put it to the steam boiler. Now the great Machine rumbles into life, lights start to flash...

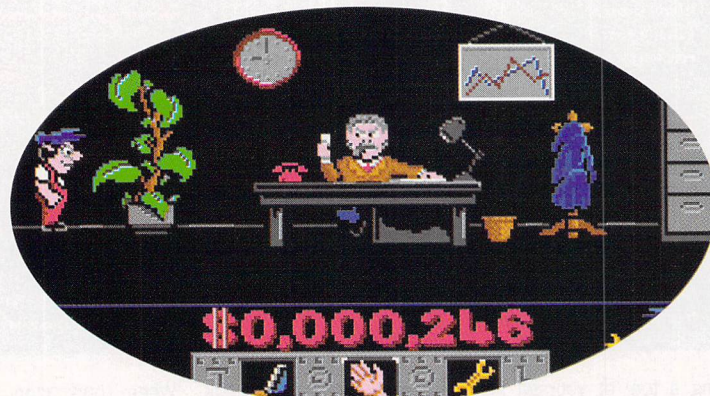


But straightaway things aren't going according to plan. Right at the top of the Machine a bolt has come loose. You must scramble up the Machine, get your spanner

LUCASFILM £24.99

night shift

In the cold and silent watches of the night, when the rest of us are safely abed, a giant Machine stirs and rumbles into life. It's called the Beast, and its sinister mission is to swamp the world with those awful plastic *Star Wars* dolls. James Leach applies for the unenviable night shift...



■ **“Your CV is fine, you've passed the interview and got the job. You'll have no problems; the machine runs like a dream. Start tonight...”**

out and tighten it up. But there's no time to rest. Now you must rush across and connect up the plug of the Raw Materials Machine. Oh, and the paint has gone all wrong! You

remix the colours – only to find the boiler's gone out again!

Night Shift is a platform game with ledges, conveyor belts and lifts. Running the Machine is like spinning

plates – you dash up and down tending to its every need. Things are always going wrong, and it often takes you a while to get to the spot. You eventually learn the best routes, but come a cropper if you rush.

Other factors keep everything from running smoothly. A lemming called Jodee runs onto the screen and forms an interesting relationship with your foot. This hampers your movement considerably, so you pull a Venus Flytrap from your toolbag and watch as it swallows the poor lovelorn thing. Weird, eh?

By contrast, balloons and umbrellas – both pulled from your toolbox – can come in very useful indeed. The balloon enables you to

“The graphics are of cartoon quality and incredibly smooth”

THE FIXIT TOOLS TO HELP YOU COPE

Vacuum Cleaner. This gets rid of those pesky lemmings. Suck those l'il varmints right up!

Hand. Use this to ride the bicycle, flip switches and turn the many knobs and handles

Umbrella. This enables you to drop down the Beast quickly and safely. What it can't do is deposit you on the platform of your choice



Your pay. Not really a tool, and not much help either...

Wrench. Use this to tighten up the bolt on top of the Resin Mixer

The Venus Flytrap. Just plant the trap near Jodee the lemming and lure him right into it

Balloon. This gets you up to the top of the Beast quickly – very useful. But you need to be quick to jump off at the right point



Match. Use this to light the burner at the top of the machine and the main furnace at the bottom



■ **Your first job is to put some life into the grotty power plant. Climb on the bicycle and pedal**



■ **Oh no! A bolt has come loose at the top of the machine. Race up and fix it before it explodes!**



■ The nerve centre of the whole massive operation: the bicycle

functioning. They do save some time and effort nevertheless.

EFFECTS

The effects certainly do the game justice. The Beast is a beautiful piece of engineering and very nicely drawn. It's a six-screen-high symphony of pumping pistons, whirling wheels and flashing lights. Puffs of steam rise, vats bubble and conveyors churn. Heath Robinson would have been proud! The graphics are of cartoon quality and incredibly smooth. You send your detailed little character

"The Beast is a beautiful piece of engineering and very nicely drawn"

dashing around with the joystick, and it responds quickly and accurately.

It's a shame the sound isn't up to the high standard of the graphics, though. There is a typically annoying little tune but the rhythm of the Machine soothes you after a while. The noise shuts down if you let anything major go wrong – like the boiler going out, for example – so it acts as another warning device.

VERDICT

Night Shift is a novel and fun idea, but ultimately just a variation on the spinning plates theme – the better you get, the more dolls you're asked to make. This limits the game's long-term interest. All you are doing is amassing points in the form of money. If you can make only \$150 after an hour's play, and the display can go up to \$1 million, then you might want to just give up and go for something your Mum would be proud of – like accountancy.

JAMES LEACH

GRAPHICS	9
SOUNDTRACK	7
INTELLIGENCE	7
INSTANT APPEAL	8
LONG TERM INTEREST	8
OVERALL	86%

A GUIDE TO THE ANATOMY OF A VERY BIG (AND TEMPERAMENTAL) BEAST

The three Raw Material Suppliers. These provide all the untreated plastic for the Storm Trooper models

The electric plug for the Raw Material Suppliers. This needs to be securely plugged in for the machine to work

Paint Vat. Release the paint by turning the wheel above the correct colour. You can also mix colours by turning more than one wheel

Conveyor belts. You can reverse these by changing the switches placed just above them

Warning lights. If any of the major components malfunctions then a light flashes on this display

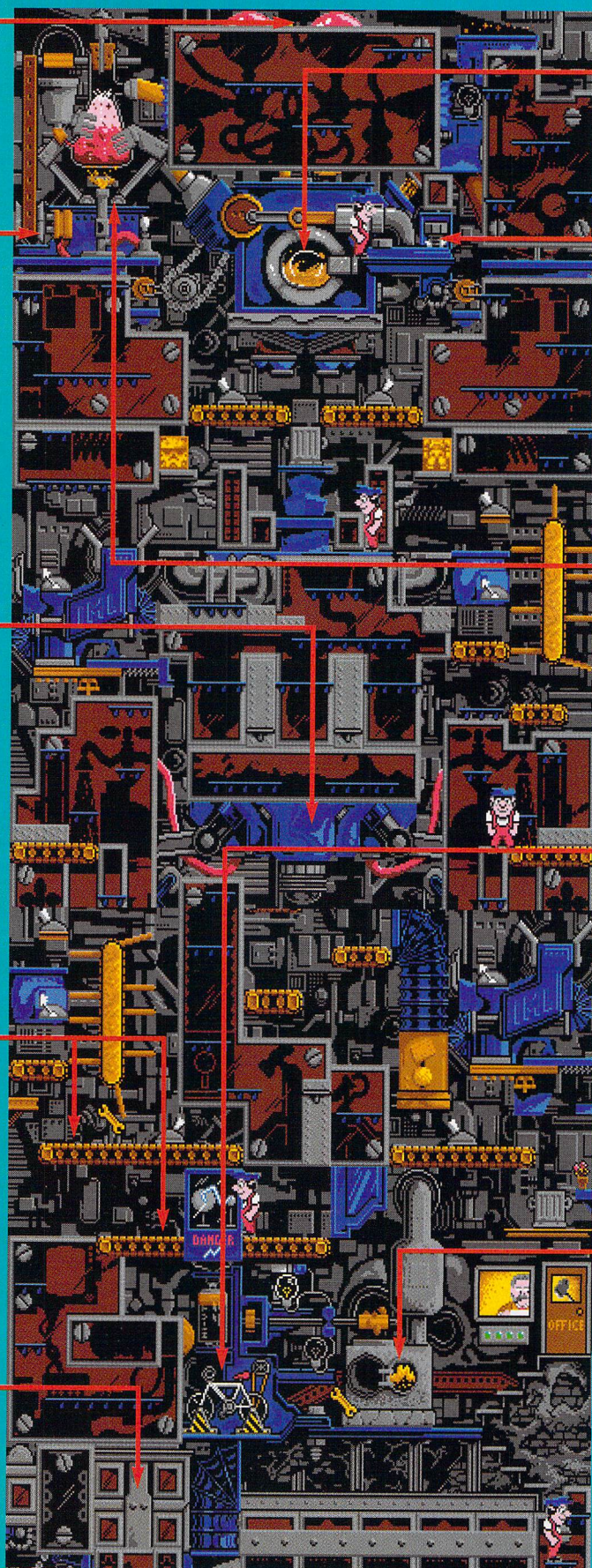
The Resin Mixer. This creates the moulds for the dolls

Steam valve bolt. You must tighten this bolt or steam escapes and causes the Resin Mixer to malfunction

The Burner. This tends to go out when you least want it to, and needs to be re-lit with a match

Bicycle. This provides the start-up power for the whole machine. You need to return to it and give it a quick ride every so often

Furnace. This is the main power plant and runs the whole machine. Make sure it stays well lit and happy



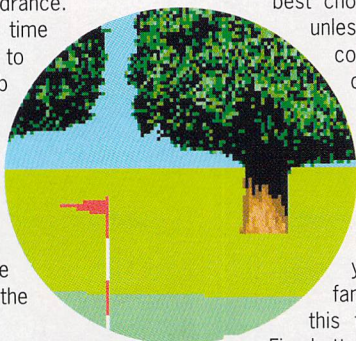
ULTIMATE £19.99

tournament golf

Golf is all about whacking a small white ball around a field and trying to get it into 18 small holes. Some people do this for fun and others do it for money – a top golfer can earn many thousands of pounds in world tournaments. In *Tournament Golf* you're one of these golfers and you are definitely playing for big money.

There are a number of icons to play with – six when on the fairway, but only four on the green. You soon realise they are there just for the sake of it. You don't need to see huge pictures of golf balls to tell you the ball's in the rough. There's no reason why all the options and info can't be presented on the main screen instead. Icons are supposed to make playing a game easier – these are just a hindrance.

Most of the time you simply want to change your club and take a shot. Your choice of club depends on the distance to the hole and the kind of terrain the ball is on. A one wood is usually the



■ **Careful! Overshoot and the trees can swallow your ball**

best choice for teeing off, unless it's a very short course. From there on you can select the most suitable club with the help of a chart included in the manual.

To take a shot you use a system familiar in games of this type. You tap the Fire button and a power bar rapidly rises to gauge the strength of

the shot. Press Fire again when it reaches the level you want – the closer the bar is to the top, the more power you put behind the ball. You must then choose the height of the ball. Another bar rapidly descends and pressing Fire at the right time determines the angle of the shot.

Repeat this process 18 times and you've played a whole round of golf. One or two players can take part on a selection of British, American and Japanese courses. In the tournament you play against 15 computer-controlled opponents over 12



■ **In this elaborate golf simulator you get a sometimes bewildering choice of screens. Putting gives you a bird's eye view of the green**

rounds, but if you're to win anything substantial, you better practise hard.

EFFECTS

The golfer's movements are fluid as he swings his club to hit the ball. The three-dimensional screens are drawn up quickly and the courses look realistic. Graphics in general are large and well detailed, and certainly above par – er, below par. Oh, you know, better than average.

VERDICT

Despite the fine graphics and very good gameplay, *Tournament Golf* offers nothing new when compared to golf sims that have been around for ages. If you don't have a game of this kind already and getting one is on the top of your shopping list, then this is certainly worth consideration. Otherwise stick to what you've got. This is good, but there's not enough improvement over other games of the genre to make it a must buy.

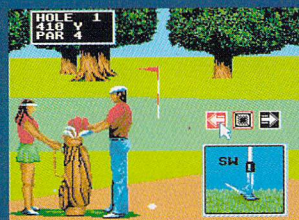
ADAM WARING

GRAPHICS	8
SOUNDTRACK	4
INTELLIGENCE	7
INSTANT APPEAL	6
LONG TERM INTEREST	7
OVERALL	73%

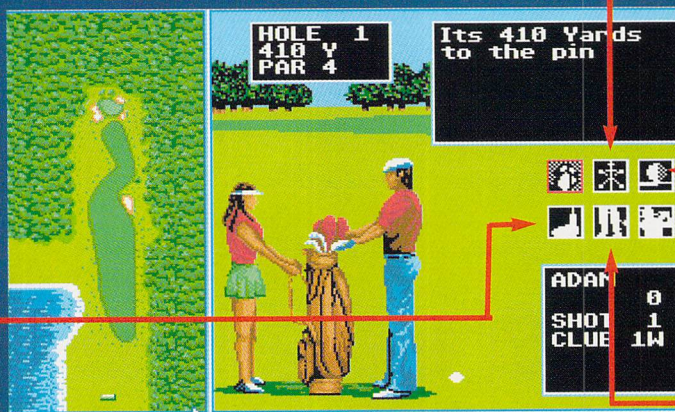
WHO NEEDS A CADDY WHEN ICON DO THAT?



Wind speed – shows the direction of the wind and how fast it is blowing



Select club – you need to use the appropriate club to tackle a shot successfully



■ **Course data** – select the top left icon and you get this screen, the main display, which gives you information on the distance to the hole, the par, and so on. Before you tee off at each hole, you can access a huge range of information – more than any real golfer could hope to find on the course! – and then, when you decide you're ready, take your shot using the bottom right icon



Ball position – a close-up of your ball indicates the terrain in which it lies



Leg position – swing those pants till you're in the perfect stance for the shot

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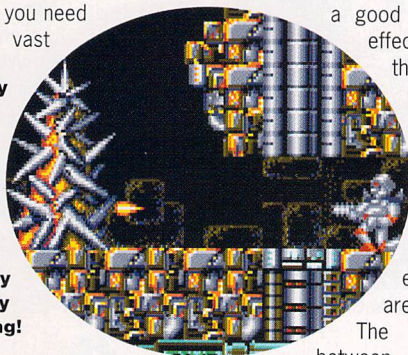
UNBRANDED DISKS AT SAME PRICES

What a palaver! That tinfoil terror is back again on a mission that's bigger than before, and infinitely more dangerous! As the athletic *Turrican*, you must explore and conquer a series of new worlds, before you can do battle with your ultimate adversary: The Giant Machine.

Turrican can run and jump with boundless energy. He also has an awesome selection of weapons to protect himself with. You can change his arsenal by collecting the various power-ups liberally spread throughout the game. *Turrican* can obtain these by shooting the creatures and robots that inhabit the many worlds.

And what a lot of them there are! Hundreds of the blighters roam the levels, and you need to use the vast

■ Those spiky pyramid-like things often block your passage. They take several hits to destroy, but when they finally go they go with a bang!



firepower at your disposal if you're going to get anywhere. The default weapon is fairly weak and unspectacular, but it's easy to pick up others, like the flamethrower, which make for a real orgy of violence.

The creatures explode beautifully on contact with your weapons, but you need to keep your eyes open all the time – good reactions are vital. Blink and you're as good as dead!

EFFECTS

Great care and attention to detail have been lavished on the look of the game. As well as the excellent

variety of sprites and background graphics, the programmers use the ST's hardware to good effect – smooth scrolling, graduated tints, and screen-shaking effects are some of the many excellent features you can expect in the game.

The sound hasn't been ignored either. A compulsive and compelling tune adds to the atmosphere and a good library of sound effects accompanies the graphical death and destruction.

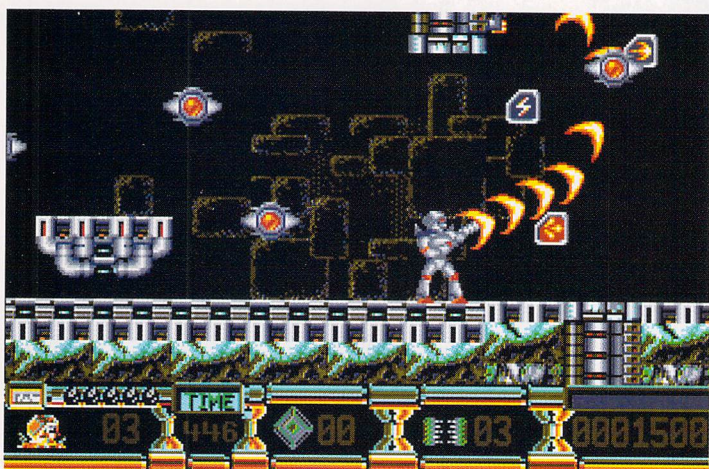
VERDICT

Turrican 2 has a huge playing area. Each level has loads to explore, and there are plenty of them.

The change in style between the levels gives arcade fans a lot to play with. The game is certainly difficult enough to challenge even the most accomplished arcade fan, but not so hard that it's going to stop your average game-player from making progress.

ADAM WARING

GRAPHICS	9
SOUNDTRACK	8
INTELLIGENCE	5
INSTANT APPEAL	9
LONG TERM INTEREST	8
OVERALL	89%



■ Wow! What a weapon! In this sprawling blast-'em-up you can get the flamethrower at any time, whatever weapon you're using. Swing it in an arc and you incinerate everything caught in its tongue of fire. Unfortunately, it takes a second or two to sweep the flames round, by which time it's usually too late. Those square icons floating around are the power-ups that change the type of weapon you're carrying

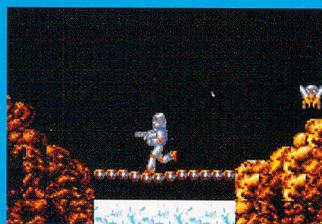
RAINBOW ARTS £24.99

turrican 2

THE EIGHT PLANES OF HELL

Turrican 2 consists of eight massive levels, and the difference isn't just graphical. They have been constructed so as to give each a unique "feel"

Level One



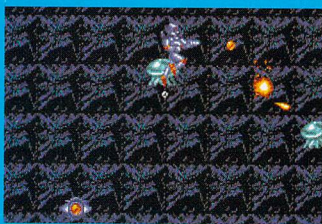
There are great heights to be scaled in the first level. This outside arena features rickety bridges over waterfalls

Level Two



Into the underworld. There are plenty of "sudden-death" traps here – avoid falling into those pits or you're done for

Level Three



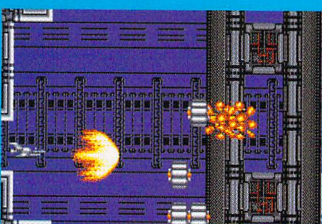
In your watertight Exo-suit you can swim around freely – but so can those monsters and unfortunately they're hungry...

Level Four



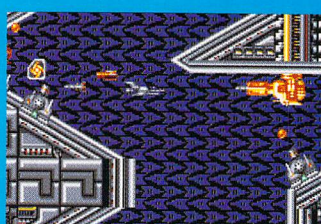
Now you're deep inside the bowels of the planet. The only way you can get here is via an exhilarating lift ride

Level Five



It's time for a change! *Turrican* jumps into his ship for the start of the shoot-'em-up section and he's feelin' mean

Level Six



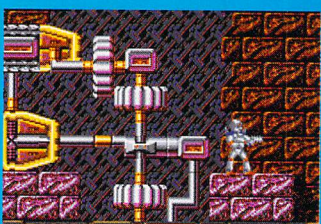
The shoot-'em-up continues unabated. More Nasties here than you could find at the annual Nasty reunion party

Level Seven



Out of his spaceship and into the Exo-suit once again – but also out of the frying pan and straight into the fire

Level Eight



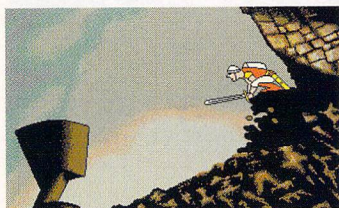
The Giant Machine is your final adversary. Plenty of mechanical mayhem threatens to grind you into iron filings

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dragon's lair 2

After rescuing the voluptuous Daphne in the original *Dragon's Lair* and settling down to live happily ever after, you've now lost the bimbo – er, princess – to the evil Wizard Mordoc. He's whisked her away to a "wrinkle" in time and intends to marry her – unless, of course, you can rescue her again. I don't know...

You play Dirk, the gormless hero, who's sitting down to breakfast with his family when his whiplash-tongued mother-in-law brings the news. Leaping onto the breakfast table, the hippo-sized bonecrusher



■ That ledge is crumbling away even as you get ready to jump

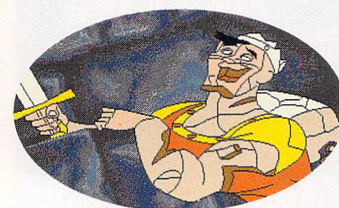


■ What now? Oh dear, don't like the look of that big plughole...

tries to flatten your head with her rolling pin. Avoid Daphne's mum or perish before you've really begun!

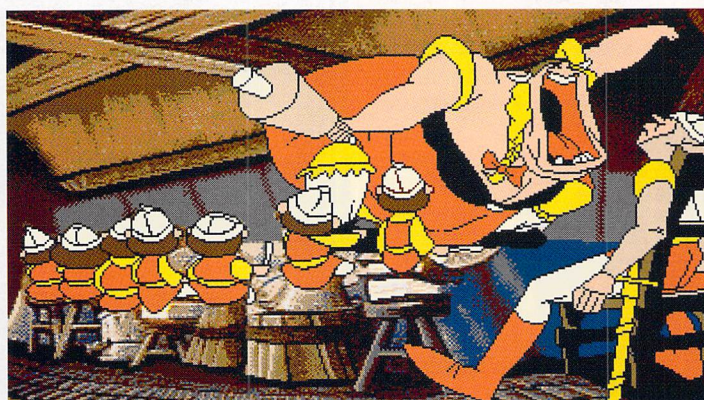
Dragon's Lair 2 follows the format of the original *Dragon's Lair*. There's a number of short animated sequences and you must make the right joystick move at the right time or meet a hideous and grisly end. In the case of the first scene, that means pushing left with the joystick just as your mother-in-law raises the rolling pin and says, "again."

From there you find yourself on a castle drawbridge. In the castle moat



■ This is what happens if you don't avoid Ma's rolling pin

time warp



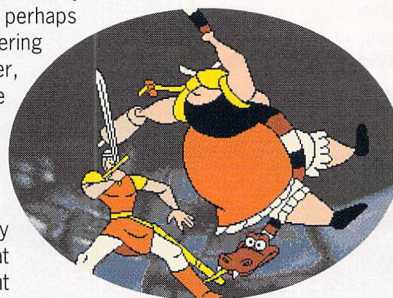
■ With a mother-in-law like this, who needs evil wizards to fight?

some ominous green tentacles stretch you like an elastic band if you don't think fast. In this instance you need to pull down then push left.

Now you are safely inside the castle. Well, perhaps not safely. Peering round a corner, you see a large snake creep up behind you. You have to whack it on the cranium with your trusty broadsword at exactly the right moment, then move after it to avoid that dreaded rolling pin. And so it goes on for 46 death-defying scenes until you rescue Daphne again.

Dragon's Lair 2 isn't really a game at all – just one of those horrible old-fashioned linear trial-and-error

adventures, but with some flashy graphics to spice it up. It's more of an interactive cartoon par excellence, an adventure that you don't just watch, you take part in too!



■ Time to make a sharp exit as Daphne's heavy-handed mum wrestles with a hapless python

EFFECTS

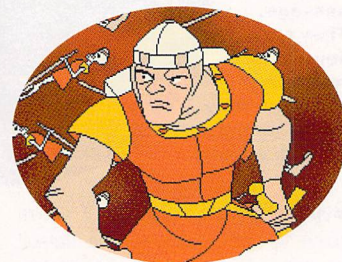
The graphics are simply stupefying – they really are just like a cartoon, in both the detail and the high quality of the animation. But, of course, this isn't a miracle in itself because all they've had to do is link a series of specially-drawn stills into an animation for each scene. What's more, the interaction is extremely simplistic as a result. Nevertheless, *Dragon's Lair 2* still looks absolutely

stupendous. It even utilises the STE's enhanced colour palette.

Sound, too, is excellent. There's a nice soundtrack and excellent digitised speech to accompany the animation. The price for all this graphical and aural splendour though is £45 and six disks!

VERDICT

It's a tough one. As a game, *Dragon's Lair 2* is visually stunning but as thin as your wallet after you've bought the damn thing. Find the right moves for each scene and you're through it. It's not easy, though,

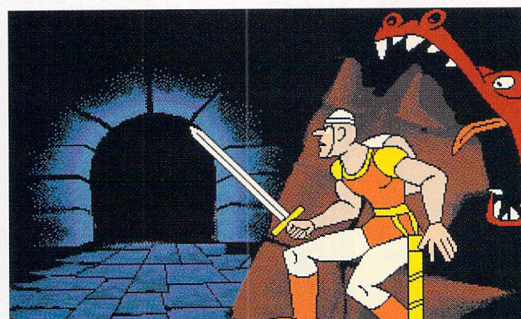


■ Dirk emerges for another bash; will you decide to do the same?

because in a five-second sequence and with half a dozen moves at your disposal, the possibilities are huge. But this just makes the game more frustrating. There's an incentive to see what happens next, and that keeps you plugging away. But get to the end once and you're not likely to want to play it again.

ROD LAWTON

GRAPHICS	9
SOUNDTRACK	9
INTELLIGENCE	4
INSTANT APPEAL	8
LONG TERM INTEREST	2
OVERALL	58%



■ Look behind you! Look behind you! A lucky back-swing with your broadsword is all that's needed



■ What are those nasty green things in the moat? Dirk's abilities are about to be stretched by them...

Warlock

THE AVENGER

CLASSIC ARCADE ACTION IN A LAND OF MYTH AND MAGIC



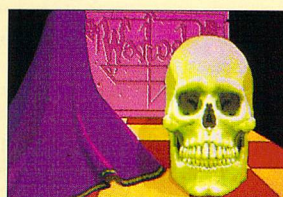
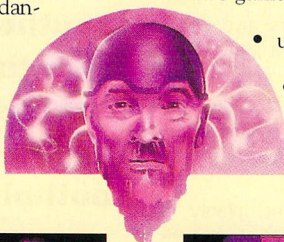
In the beginning there was 'Druid', hailed as a milestone game at the time of its release. Then came 'Enlightenment', and now there's **Warlock the avenger**, the third game in a classic series. Designed by Dene Carter,

Warlock the avenger takes the player yet deeper into the dangerous world of Belorn, where the evil lord Acamantor has returned to hold the land in his grasp. Strive to re-awaken your ancient spells and find your way through eight trap-strewn dungeons, overcoming unknown obstacles, locating secret passage-ways and keeping

Acamantor's monstrous minions at bay. Your task is to find and destroy the evil power. Only by unleashing the arcane power of Chaos can final victory be yours.



- two games in one, you get the original *Druid* game, included **free**.
- use elemental forces to cast the most effective spells
- create *Golems* and work together in the two player game
- avoid gigantic fire-spitting skulls and Acamantor's teeming army of monsters



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THALION

enchanted lands

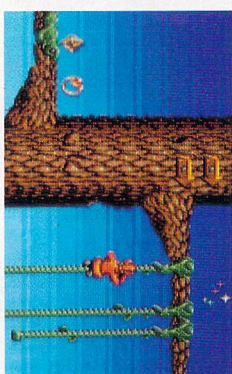


£24.99

■ Having retrieved one portion of magic, Krugan can leap onto this handy tree platform, the sole occupant of which is a scorpion



■ These ropes lead to part of the Heart of Lore, but there's also a big surprise waiting – and it isn't a free subscription to Reader's Digest



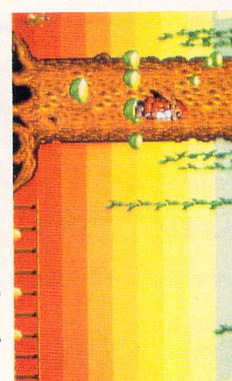
■ A vicious little whirlwind guards the way out – and it can sap your energy quicker than a heavy boogie to the KLF's "What time is love?"



■ Having mixed your potion, you encounter the end-of-level monster – in this case, a gigantic frog (genus: Messus-with-meus-and-you're-deadus)



■ Level Two has a few surprises in store. Here, three beetles – intent on stamping on your head – form a posse and advance towards your position



Fantastic lands and fairytale creatures are alive and well in *Enchanted Lands*. In fact life has never been better for the wizards and monsters who do battle every day. However, something has gone terribly wrong and the Heart of Lore – the source of magic which kept the land of Damiran happy – has been shattered into 100 pieces.

You're Krugan, an elderly wizard, and you've been chosen by the elders to retrieve the magic which made up the Heart of Lore and restore life to its old happy state. This involves you battling with legions of spiders, beetles, fish and mummies. You must use all your magic skills to defeat them and return to the village in one piece.

Enchanted Lands is an advanced platform game in which you have to explore all six levels and capture the lost fragments of magic. The landscape scrolls as you make your way to the end-of-level exit and you must search all areas if you're going to find anything.

Grassy knolls, verges and rocks are the standard landscape features, but take a trip up a tree and you

"It's very easy to get into, but nigh on impossible to put down"

discover a whole new sub-section. Doing so is easy: ropes hang from trees, and large flowers give you a petal-up, catapulting you into the air and enabling you to scale sheer walls. Clouds form bridges between sections, and there are caves and tunnels that conceal a treasure-trove of power-ups and magic.

There are, however, plenty of vicious creatures in *Enchanted Lands* and they're all wizard-killing monsters with death wishes. Most common among these are invincible beetles – they jump when you do and quickly reduce your energy. Scorpions are quite predictable opponents: they wander up and down at regular



■ Leap over that pit containing wizard-eating flowers and not only do you not get killed, you're rewarded with an extra life and some gems

The old wizard Krugan is annoyed because the Heart of Lore has been destroyed. The despicable Plogthor is responsible, and if he recovers the bits there's going to be big trouble. Andy Hutchinson attempts to placate Krugan, foil Plogthor and eat an entire Chinese meal using only his left foot and a toothpick

intervals, and so do the dragonflies. Nastier opponents include spiders who drop down on your head and mummies who stick with you like flies to mouldy dog poo.

In order to progress you must collect all the potions you can find. Most of these are hidden and you flush them out by firing at their hiding place – usually a tree or a rock. As you gain more and more magic you can use better and better weapons – there's a total of nine to choose from, varying from the bog-standard spark to the highly amusing smash bomb. You can make these more powerful through the use of potions which are mixed together at the end of a level – just in time to use them against the particularly large and nasty end-of-level monsters.

EFFECTS

When you first see the smoothness of the scrolling in this game, you could almost swear you've sat down in front of your TV instead of your



■ Down in the grotto, you can pick up some extra lives and get more jewellery than you'd find in Samuels' biggest window display

ST. Krugan climbs and leaps his way around the game with amazing fluidity. Jump up and the whole screen smoothly scrolls with you. What's more, there's an amazing sense of free movement, caused by the way the game lets you clamber all over objects, rather than leaving them as parts of the very attractive back-grounds.

Colour is used to great effect. Bright, well designed creatures complement the very detailed backgrounds, and the

"Spiders drop down on your head and mummies stick with you like flies to mouldy dog poo"

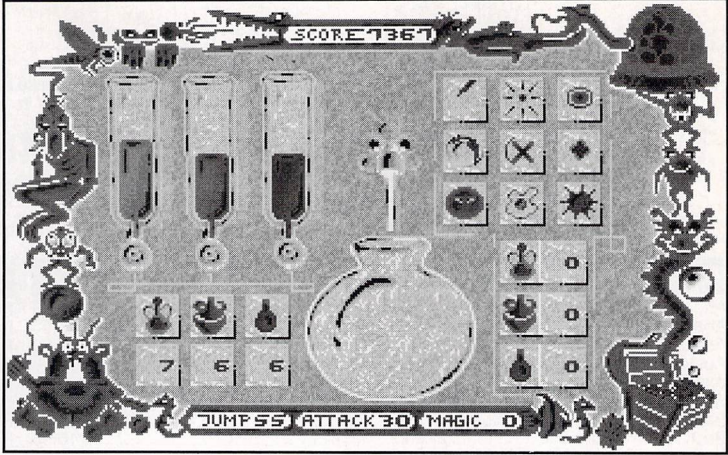
animation is as faultless as the scrolling. Sound is internally generated, but well up to par and not intrusive enough to ruin your concentration while you play.

VERDICT

Phew! *Enchanted Lands* is an extremely addictive game. It's very easy to get into but nigh on impossible to put down. Every facet of the game oozes playability. You've got to be nimble on your feet and

■ Breaking the world Holding Your Breath record, you pass a shoal of vicious sticklebacks...

Then chance upon a fragment of the magic Heart of Lore, hidden away in a tiny crevice



■ At the end of a level you can mix all your potions together and power-up your weapons – just in time for the end-of-level monster

"Krugan climbs and leaps his way around the game with amazing fluidity"

rapid with your Fire button to beat the end-of-level creatures, but it's a joy to go leaping around the screen because it's so smooth and fast.

The difficulty weighting of the puzzles is excellent. The first level seems hard, but you soon realise that you've actually been eased into the game and are ready for some real treats on the later levels.

It's very hard to fault *Enchanted Lands*. The only niggle is that you have to keep pressing the Spacebar to enter the game and leave screens – surely pressing the Fire button would have been better.

A couple of ex-demo writers programmed *Enchanted Lands* and they certainly knew what they were doing. They've produced an enjoyable, absorbing platform game with more twists than a pig's willy warmer.

ANDY HUTCHINSON



■ Your choice of weapon isn't entirely up to you – to use the more powerful items, you need to build up sufficient energy

GRAPHICS	9
SOUNDTRACK	8
INTELLIGENCE	8
INSTANT APPEAL	9
LONG TERM INTEREST	9
OVERALL	92%

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jupiter's masterdrive

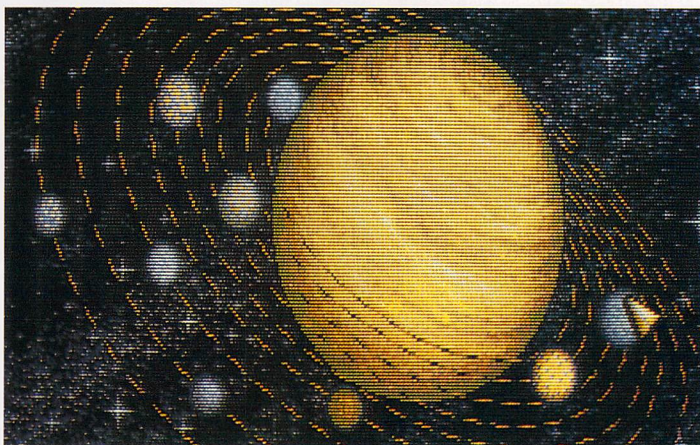
UBI SOFT £19.99

Cast your mind back four years and you may recall a game called *Super Sprint* where you had to race little cars around increasingly difficult circuits. *Masterdrive* is a similar racing game but it's graphically way ahead of that oldie. The gameplay is much deeper too: you can bolt stomach-churning armour and guns to your car and collect more fuel and power as you go.

It's the Fifth Millennium and violent sports are banned. A fun-loving Corporation has designed remote-control cars you can race from the comfort of your Fifth Millennium MFI sofa. The cars race on nine circuits, each situated on a moon of Jupiter.

You start off with a wad of cash and get more depending on where you come in the races. You can beef up your car's specs with your dosh and prepare yourself for the next – tougher – round. You can also pick up extra goodies – like fuel, repairs, and ammo – as you drive. Beware though of hazards like glue, ice and force fields, and of course your opponents!

On the opening screen there is a pretty picture of



■ Click on Jupiter – the big one – to enter a full tournament in this futuristic racing game, or on one of the moons for the practice mode

Jupiter and its nine moons. You can explore these moons without getting into the full tournament by selecting the practice mode – simply choose the moon you want to try. In this mode you can keep racing as long as you have the cash to enter the races.

In the tournament mode you start on the easiest moon first and then gradually go on to the tougher circuits. After

each race there's a bonus time trial where you compete with one other car to pick up bonuses. If you run out of time in either the race or the time trial, then it's game over.

It all seems easy enough at first, but it's Jupiter to a brick that you aren't going to finish the tournament on your first go.

EFFECTS

The graphics don't look much at first glance, but you soon find that there's been a lot of attention paid to detail: each circuit is different in layout, obstacles and driving characteristics. There are also ice-tracks, deserts, and desolate crater-strewn landscapes to negotiate. The cars

move quickly and smoothly, and slide about in an impressively realistic – and frustrating – fashion.

Sound consists of a suitably menacing title tune, jaunty between-stage jingles and good in-game effects which complement the action well. A bit of digitised speech might have spiced it up a bit, though, especially in the shop section, where a bored-looking alien taps his finger on the counter waiting for you to decide what you're going to buy.

VERDICT

Jupiter's Masterdrive grows on you the more you play it. At first, you can manage just driving flat out, not buying any new equipment and watching your cash pile up. But once you get to the third or fourth level, you start getting left behind and must invest in some goodies for your car!

Best of all is the simultaneous two-player mode. This keeps you racing long after those computer opponents have got boring. Basically just another racing game, but with more depth and better graphics than most.

ROD LAWTON



■ This is the shop screen, where you can lay your hands on such useful goodies as armour and increased speed – for a price

GRAPHICS	8
SOUNDTRACK	6
INTELLIGENCE	6
INSTANT APPEAL	7
LONG TERM INTEREST	7
OVERALL	76%

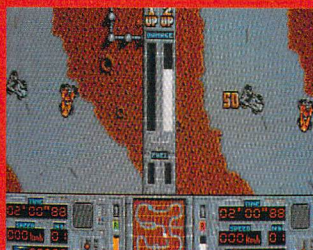
WITH TWO MASTER DRIVERS, IT'S TWICE THE MAYHEM



■ On some moons it's ice; on Moon Two it's sand. Race your car between the dunes in the simultaneous two-player mode



■ Want to get ahead? Simply push the joystick forward to shoot your opponents – easier than trying to out-drive 'em...



■ Player Two sneaks into first place, scooping up the large prize purse, and Player One is left with absolutely nothing!



■ Now you've made it to the between-race stage: gather as many bonuses as you can in the limited time available

FLAMES

OF F



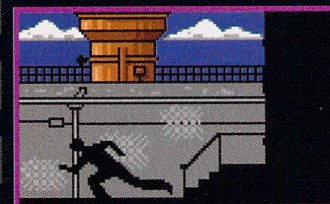
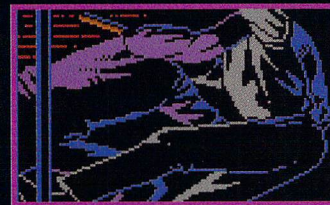
FLAMES OF FREEDOM

Sixty years ago the ice-bound island of Midwinter was saved from the threat of destruction at the hands of invading hordes; but a prosperous future was denied by a greater enemy - the Earth's changing climate. Reclaimed by the seas which had created her, Midwinter was abandoned by her people, in search of a home on any friendly island standing tall above the rising seas.



"In the more temperate equatorial reaches of the Atlantic, only one of forty-two islands held out a hand, welcoming the survivors into the Atlantic Federation, a force for peace, prosperity and democracy. But the new home is threatened by the evil Saharan Empire, a mighty military dictatorship based on the African mainland, already enslaving the other island communities, and ultimately intent on conflict with the Federation.

The enslaved islands are home to freedom fighters looking to break free from Saharan domination and join the Federation. The mammoth task facing the Federation is to covertly aid the liberation of as many islands as possible before the Saharan Empire makes its final push for Atlantic domination. The Flames of Freedom must be lit. The torch is about to be passed to you."



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RESTRICTED

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Flames of Freedom provides you with a magnificent strategic challenge, fought according to your strengths, weaknesses and abilities, and visualised via graphics sequences even more stunning than those of its predecessor - with Midwinter II, a new age dawns

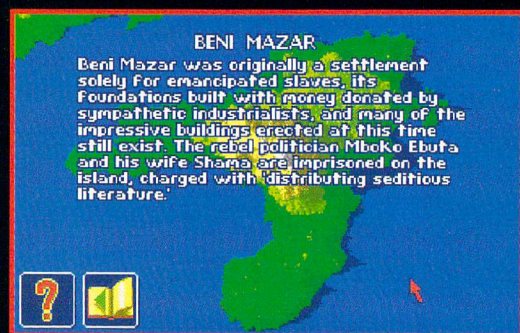


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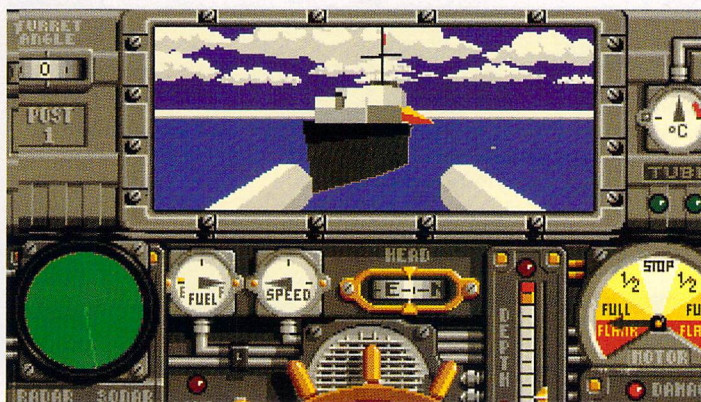
advanced destroyer simulator

FUTURA £19.99

The problem with being a ship's Captain is the terrible loneliness of command – especially in *Advanced Destroyer Simulator*, because you don't actually have anyone to command. This WWII warship sim puts you totally in charge, so you have no-one to blame but yourself as you end up on the ocean floor for the umpteenth time.

Having a crew of one does have its problems – like keeping your eye on all the weaponry. It can be a bit of a handful to keep everything going.

The action takes place in three geographical areas: the Mediterranean has the easiest scenarios, the English Channel and the North Sea more difficult campaigns. Five of the six missions in each area have specific targets to destroy. The sixth is a Delta mission, where you must



■ Master the controls in this World War Two warship simulator and head into battle – but hurry! That enemy cruiser's coming right for you!

patrol an sector and repel anyone who strays into your waters.

One thing about accurately simulating war at sea is the time it takes to get anywhere: half an hour to reach the target does make travelling a bit tedious. Lucky then that ADS has a speed-up option, available whenever you're in map mode, which makes the game progress at a fair old rate of knots.

Probably just as luckily, you're brought out of this mode automatically if you meet any other vessel. If it's an enemy, you have a choice of weapons: torpedoes cause more

damage and sink an enemy much faster, but they're difficult to aim: you have to take into account how far the target is likely to have moved by the time they hit home. Firing the cannons is easier: find the correct elevation and you can keep up a constant bombardment on the enemy. The drawback here, however, is that far more direct hits are needed.

As well as the ship you're out to destroy, there are plenty of other ocean-going vessels. These have to be identified if you want to avoid sinking a friendly. Should you happen to meet a plane then your only hope

is to shoot it out of the sky – not an easy task with 120mm cannons.

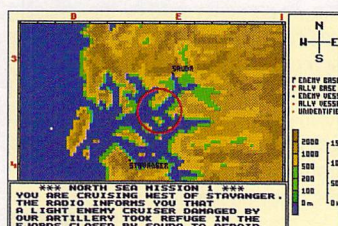
EFFECTS

The 3D bitmapped graphics work well. Because of the speed of sea-going vessels, there are no jerkiness problems of the type that sometimes occur in flight sims. The horizon bobs very credibly up and down with the waves, adding realism – and possibly a dose of sea-sickness!

VERDICT

There are a couple of niggly points concerning the controls – there's just too much to look after when in the thick of battle, for instance – but despite this, *Advanced Destroyer Simulator* is brilliantly atmospheric. It's very easy to become totally absorbed by the game and find yourself obsessively determined to carry out your mission – whatever the cost!

ADAM WARING

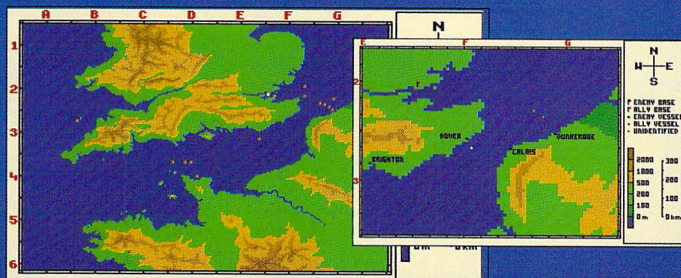


■ Before you set sail, you get a mission briefing: find an enemy cruiser hiding in a remote fjord

GRAPHICS	8
SOUNDTRACK	4
INTELLIGENCE	8
INSTANT APPEAL	7
LONG TERM INTEREST	8
OVERALL	79%

A LOVELY SEA VIEW AND MORE CONTROLS THAN THE QE2

What's that? You say you've always wanted to see the sea? Well, in *Advanced Destroyer Simulator* you may well get a glimpse of it, from several different angles – but with all the control systems to keep your eye on, most of the time you're just too busy to take the time to enjoy the view



■ Map: crucial to navigation and strategic planning alike. This displays the position of all known craft in the area, identifies them as allies or enemies, and even locates their bases for you. You can zoom in for greater detail (inset), and also access the speed-up mode from here



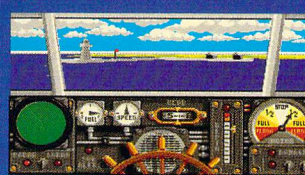
■ The Gun Post: you're armed with three turrets – two at the front and one at the back



■ Torpedo tubes: you can fire up to four at once – from both port and starboard



■ Binoculars: double your power of vision, so you can check any distant objects



■ The Bridge: steer your ship from here – and this is how you normally see the world



■ Damage Report: examine the damage. You can't fix it, but at least you know about it

Would you prefer getting blown to bits or picked up by the fuzz (oer)? In *Crime Wave*, if you're evil enough to kidnap the US President's daughter while she's on the toilet then it's all you deserve, according to our vigilante hero Luke. With all niggly questions of morals out of the way, let the carnage begin in this glorious tale of liberty, democracy and the preservation of safety in toilets.

The year is 1995. An organised crime syndicate has taken over a large number of cities. Drugs, Murder and Extortion are tightening their grip over the good people of America. But this time, the mob have gone too far. They've kidnapped Britanny Cole, the President's daughter. What's more, she's a bit of all right! Luke can stay silent no longer. With



■ A customer tries to leave this horizontally-scrolling shoot-'em-up without paying her bill. Thank goodness Luke and his trusty rocket launcher were on hand to remind her!

there's more hardware in the air than after an explosion at a computer shop. However, until Luke's five lives are gone the destruction rolls on from street to subway, eventually leading to King Pin's heavily guarded mansion for the final showdown.

EFFECTS

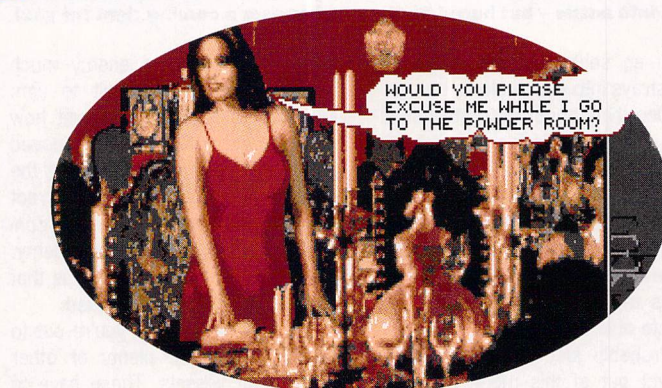
The graphics are painfully slow. It's impossible to avoid anywhere near enough bullets – there are simply so many of them flying about on screen. The only way to get through this game is to slap the joystick into auto-fire, grit your teeth and charge. Tactics? No way, there just isn't the depth. The only gimmicks are the exploding bodies, creating a "Big

US GOLD £24.99 crime wave

tottie at stake, the situation demands immediate action. A softly-softly approach is needed, and above all stealth and diplomacy. Unfortunately, Luke is into mindless violence with a rocket launcher and machine gun.

Spurred on by his trousers, Luke consults his computer – his suspicions are confirmed, the President's daughter is definitely a bit of all right. He also discovers that an old adversary is master-minding these stains on the sheets of justice, a gangland boss known only as King Pin. But first, a small-time hood has been linked to the kidnapping...

Crime Wave is a horizontally-scrolling shoot-'em-up. You play Luke, the man with a death-wish who intends to rid the city of King Pin and all his vile minions. Armed only with a machine gun, a rocket launcher and



■ Little does our unsuspecting heroine know of the evil lurking in the toilet! King Pin has a deadly surprise waiting for her...

a very funny walk, Luke struts his way through level after level of bloodshed, picking up energy, ammo and extra lives along the way.

All the while, King Pin's hoods stand in your way. Don't worry, a

couple of missiles soon shifts them. Limbs, bullets and blood fill the screen as Luke makes his inevitable progress from left to right.

After a while, Luke dies. This isn't too surprising if you consider

Bird meets Bernard Matthews" vision of bloodshed. The intro scenes are good, with some nice animated touches, but don't let this fool you.

VERDICT

A truly awful game, dragged out of the 20 percent range by the amusing nature of the graphics. Sure the screen shots look great, but that's as far as it goes. *Crime Wave* is just further proof that companies should get back to grass roots and concentrate on the game itself rather than the fancy packaging.

NEIL WEST

GRAPHICS	5
SOUNDTRACK	5
INTELLIGENCE	2
INSTANT APPEAL	6
LONG TERM INTEREST	3
OVERALL	38%

HOW TO BLAST YOUR WAY THROUGH WAVES OF CRIME



■ Hooray for Luke! Another turkey receives his just punishment at the hands of our hero – or at the end of his rocket launcher...



The giblets and stuffing tumble to the ground... a great victory for the cause of liberty, the President and safety on toilets!

GO WILK!



No ugly wart-nose is gonna make a monkey out of me! But that's just what that witch has done - one minute I'm the mighty Toki and the next I'm having breakfast delousing my armpits, I can't walk a step without tripping over my knuckles and, oh, there's an overhanging vine - time to swing out sister! But my broken heart is going ape. My beloved Miho (I can't wait to share a banana with her) has been kidnapped and somehow I've got to regain my manhood - until then I'm just swingin' in the rain!

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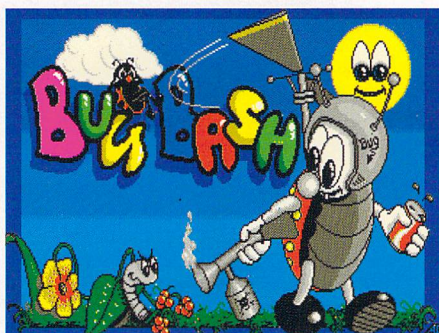


screenplay *extra*

"I'm sorry, we seem to have lost that report on the return of Terry the Terrapin, the bowling reptile. However, I've just heard we're going straight over to Screenplay Extra where our reporter, ST FORMAT, has a profile on some great, late, dated, or otherwise sedated games that wouldn't fit into the previous section"

TEN GREAT LINES TO A COMPUTER SHOP ASSISTANT

1. But I don't want the free watch, mug, poster, T-Shirt, calendar, patch, badge, pyjamas, flange grommit, jubilee clip, soundtrack, sunglasses or keyring. I just want the blimmin' game at a reasonable blimmin' price
2. My mum said I've got to buy something more educational, so can I have *Xenon 2 - The Advanced Calculus Version*
3. When's the Acorn Atom version coming out?
4. Can I interface this to my Sinclair C5?
5. I'd really like to work in a computer shop when I grow older. What qualifications do I need?
6. On level 924 of *Mutant Slob Rats from Zog*, how do I get the portal transporter past the 17 sentry droids?
7. Is it true that you make eight quid on every ST game you sell?
8. I bought this game here two years ago and this morning it completely refused to load. Can I have my money back?
9. Could I have a quarter of aniseed twists and three Curly Wurlys please?
10. How come you've had a poster of *Adolescent Slezoid Chimpanzees* up for the last 18 months and yet there's still no sign of the program?



■ There's me thinking that *Bug Bash* must be some sorta blimmin' excellent VW Beetle congregation. Having seen this game, I think I'll stick to my V-Dub...

1984. Scrolling is slow, movement is restricted and sound is bland – but at least the colours are nice and bright.

STF Rating – 58%

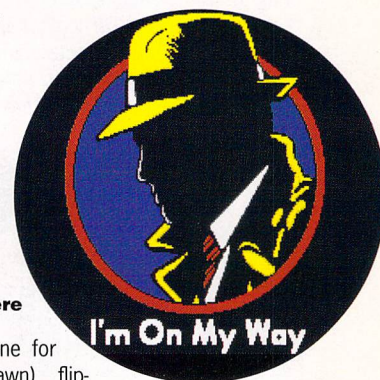
DICK TRACY

Titus – £24.95

The computer game of the film of the comic strip has arrived. We all know the story of *Dick Tracy*, that debonaire fighter for truth, honesty and the Madonna way of life. So does the game live up to its big licence expectations?

Ermm, no, not even remotely. This is completely predictable pulp computer entertainment.

■ If this desperately awful game is on its way, I'm getting the hell out of here



Titus have gone for a (yawn, yawn) flip-screen beat-'em-up. There are only two sprites used to represent Dick walking, so he trots across the screen as if he's doing the can-can backwards and at twice the ordinary speed. Legions of bad guys then appear, firing streams of little yellow dots – you either punch 'em or shoot back. Finally, there is a predictable horizontally-scrolling car chase. After that it's back to more awful and jumpy shooting.

The graphics are awkwardly and simplistically animated. The screen update is very slow, and the combat wildly unrealistic: your pistol fires the same stream of little yellow dots as the enemies' machine guns, so you tend to shoot anything and everything that happens to be in the way at the time. The gameplay is bland and derivative – a fingerless three-toed sloth could play this. The soundtrack is as twee as the worst elevator music. In short, *Dick Tracy* is unmitigated crap.

If the future of film licences looks like this, then don't bother. Games which look like a child's first BASIC program shouldn't see the

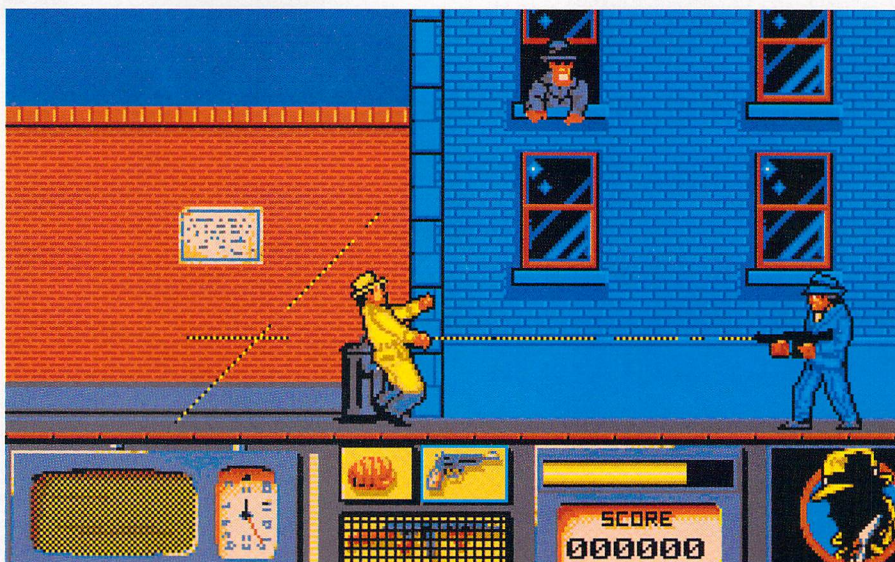
BUG BASH

Big Shot Software – £19.95

Apparently, an "Evil-Slug" has cast a spell on all the insects in your garden. As a result, the place looks a bit of a mess and there are swarms of stoned flies and bugs zooming around. It's your job to clear up the garden. So lock and load your insecticide spray-gun and ruin their day before they ruin yours.

Bug Bash is a shoot-'em-up of sorts. Your main weapon is a spray-gun which you waft in the faces of wayward insects. This isn't very nice when you consider that you are an insect too. You can fly with the aid of a propeller (now that's evolution) or walk slowly along the ground. Pick-ups and power-ups are available to boost your fire power or your score.

Bug Bash is a very dated game. It says on the box that it took two months to develop – two wasted years if you ask me. I remember playing a remarkably similar game on my BBC, back in



■ Oh dear me. Little yellow dots and little real gameplay. Could *Dick Tracy* be the duff licence of the year? Or can a big name carry a dire game onto the bestsellers charts?

light of day. You'll have more fun seeing how many cocktail sticks you can fit up your right nostril. Avoid.

STF Rating – 25%

MULTI-PLAYER SOCCER MANAGER

D&H Games – £24.99

Back in *ST FORMAT* 17, we reviewed a game called *Cricket Captain* from D&H Games. *Soccer Manager* is their latest offering, promising to bring the same depth to football.

This is no *Kick-Off* lookalike, rather a long look at just about all aspects of the game of football. Up to eight players can participate in *Soccer Manager* at once, each taking control of a



■ In *Soccer Manager* managing a football team is one of the most thankless jobs there is – win and the players get the credit; lose and they pin the blame on you

team which must be guided to bigger things. There are 100 teams and 1,250 players to choose from. You can participate in The European Cup, the UEFA Cup, the Association and even the League Cup. Every aspect of the team's performance is under your expert guidance – so don't screw up, or the only place you're likely to end up in is the North Peckham Kebab League.

This strategy game probably appeals more to die-hard football fans than other kinds of game-player, but the program is very well designed and completely icon controlled. Aspiring Venables check it out.

STF Rating – 81%

TEN REASONS WHY YOUR HARD DRIVE ISN'T WORKING

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- 5 A colony of African banana beetles, who came over on the boat last week, have found a warm safe place to set up home and produce babies
- 6 Your mum tried dusting the drive last week, squirted Mr Sheen in the grille at the back and then found that the fan shredded her jay cloth, which now nestles on your drive surface
- 7 A friend of yours has replaced the drive with a Tupperware lunchbox, hoping you wouldn't notice (and you didn't...hahaha)
- 8 There isn't actually a drive inside the box, just a highly trained rat with a great memory, who goes by the name of Nigel... er, *went* by the name of Nigel
- 9 Maybe living in a shed 100 yards from runway two at Heathrow isn't helping the heads locate the right partition
- 10 Your drive's been listening to all those samples you store on the drive, has changed its name to MC Driveski and decided to take up a career in pop music with Betty Boot Sector

ACTION, EVEN ON A BUDGET

Action Sixteen – £9.99 Each

Action Sixteen have just released a series of half-price budget games. Although they're quite elderly now, they're still excellent games. If your budget doesn't run to 30 quid, try one of these for size.

● **Rotor** from Arcana first came out in 1989. You must pilot a Roto-raider craft behind enemy lines. To get you ready for battle, you can try out the six simulator tests. Then when you've earned sufficient "prestige units" you can go head-to-head with the enemy. The game itself is very much like *Thrust* – you're battling as much with gravity as with the alien emplacements.

STF Rating – 73%



■ In *Maya* you are enjoying the peace, serenity and pure karma of forest life, when a jeep zips up behind you, flashes his lights, beeps his horn and makes you pull over. Give me the M25 any day

● **Maya** is a graphic adventure, combining many disparate elements. However, it's not just a mish-mash – there is a plot in there: you're in search of lost treasure hidden in the depths of the Yucatan jungle. Watch your back, though, because Dr Olrik Karloff wants to beat you to it and he's got a jeep too. *Maya* is an enjoyable game with slick presentation and some nifty touches.

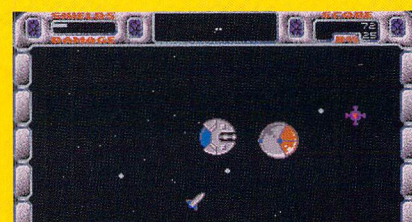
STF Rating – 83%

● **Hostages** emerged in 1988 and had excellent reviews. You are in control of a Terrorist Intervention Combat Team and must rescue a group of hostages held by a terrorist group. Both the graphics and sound in this game are superb. The format is original and absorbing. This two year old game looks better than many new titles.

STF Rating – 90%

● **Cosmic Pirate** is, in many respects, similar to *Rotor*. Palace use an almost identical looking ship and similar gameplay in this space game. The idea is to go around blagging stuff from the space fleets, soup up your ship and stay alive. If you don't think you're good enough, then try one of the simulators.

STF Rating – 80%



■ My word, things certainly hot up quickly in *Cosmic Pirate*. All those heat-seeking missiles zipping around and some sod hogging the spacelane slip-road. Time for a sharp exit...

FORMAT RATINGS – THIS MONTH

How did they shape up, then? These are the games *FORMAT* reviewed this month



MIG-29 FULCRUM	page 29	92%
ENCHANTED LANDS	page 70	92%
TURRICAN 2	page 67	89%
METAL MASTERS	page 61	88%
GAZZA 2	page 57	86%
NIGHT SHIFT	page 62	86%
Advanced Destroyer Simulator	page 77	79%
Jupiter's Masterdrive	page 73	76%
Tournament Golf	page 64	73%
Total Recall	page 59	66%
Dragon's Lair 2	page 68	58%
Crime Wave	page 78	38%



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BACK TO THE FUTURE 2

Mirrorsoft

Pause the game and type "THE ONLY NEAT THING TO DO" (making sure there's one space between words), then type "CAN" and this takes you to the next level. Repeat typing "CAN" on each stage to complete the game in seconds.

BARBARIAN

Psygnosis

Start a game, enter 04-08-59 on the keypad and swing your sword. You should now find it impossible to die.

BLACK TIGER

US Gold

When prompted to insert disk two, insert a blank disk. No bad guys are loaded.



■ **Black Tiger's** terrain is often your worst enemy, so it helps to avoid any other foes

CHASE HQ

Ocean

Hold down the joystick Fire button and press the left mouse button simultaneously, then type in "GROWLER". Now if you press T your time resets to 60 seconds.

CONTINENTAL CIRCUS

Virgin/Mastertronic

For a super-fast start follow these instructions.

1. When the red light flashes, press up on the joystick
2. When the second red light comes on, release the joystick
3. When the green light flashes, push up again.

CRACKDOWN

US Gold

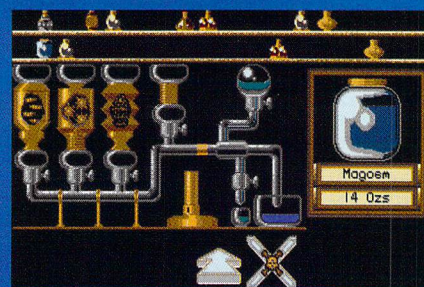
Type SMURF and then hit F1 and F2 to give your two characters unlimited lives. ➤

DRAGONS BREATH

Palace

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STF PRIZE

When reader Mark Anderson asked if we wanted to know how to rear dragons, we dived for cover. Then he explained he was talking about his solution to *Dragons Breath* and we grabbed it before he could say "You're welcome"



■ If you can get your hands on the right ingredients and mix the spell properly, you could blow the head off your dragon

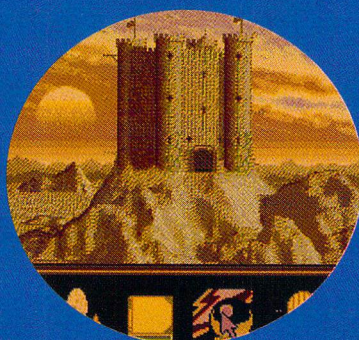
MONTH TWO

Now put the tax rate up to full, and leave your dragon in the village.

MONTH THREE

You should now have more than 100 gelds in your coffers. Spend the entire lot on the trader who willingly sells you Celatis – or the one at the top of the list – for ten gelds. Now go to your village on the map, and cast a spell on it. Turn the condenser on to one coal, heat on one. Now add ten (yes, ten!) of the Celatis at normal. Add Churl (normal, condenser off, heat one), until the mixture grows vicious (about eight or nine). Click on the arrow and sit back in awe! Your village should now be virtually invincible (apart from plagues), and the up-rising should be at about zero.

Immediately put four eggs on the boil set to about half heat – or however much you can afford, remembering that one egg costs ➤



■ **Position, position, position!** Ametrin's castle is ideal for meeting those traders

Way back in ST FORMAT 10, we did an intense review of this superb adventure game out of the Palace stable (they of popular games like *Barbarian* and *Future Wars*). Now here's a complete solution to the game, courtesy of adventure addict Mark Anderson from Shrewsbury. You can take the matchsticks out of your eyes now, Mark!

Start off by choosing to play with Ametrin (the green dude), since his castle is in a good position and you get to meet some superb traders.

MONTH ONE

Send your dragon (Estor) to conquer and keep the village of Morlic on the west of the map. Your dragon should take this with ease.



■ **Make sure your dragon's eyesight is in tip-top condition and scour Anrea for the three missing parts of the talisman**

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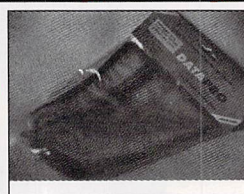
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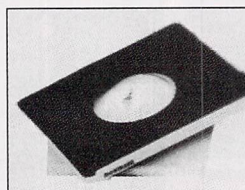
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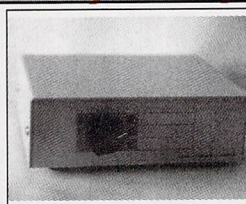
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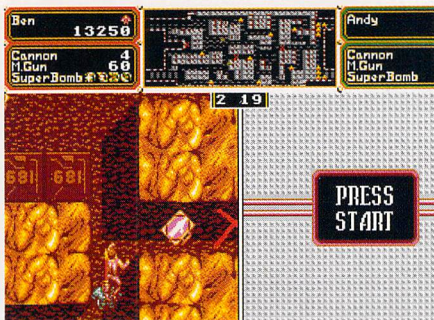


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■ You thought Smurfs were just annoying little blue cartoon characters? In *Crackdown*, one a day can give you immortality!

DOUBLE DRAGON 2

Virgin/Mastertronic

Start a two-player game, press both Fire buttons and then hit <Esc> to get infinite credits.

DRAGON SPIRIT

Domark

Pause the game and type "DRAGONHEAD" followed by F10. Then to skip levels just press the corresponding number key.

ELITE

Firebird

When the game asks you to type in the code from the book, type in "SARA" instead and press <Return>. Now type the correct code. Press the * key and lots of numbers appear. Type in 98 and then press <Return>. Type in 01 and press <Return> again. Press the <Esc> key and go into inventory where you should find you have something to sell. Note that this tip works only with earlier versions of the game.

E-MOTION

US Gold

When the game has loaded, type in the name from the title screen. F1 now advances through the levels in turn and F2 moves you forward ten levels. Hit F3 and F4 to move backwards.

GEMINI WING

Sales Curve

The passwords to the other levels are Classics, Whizzkid, Gunshots, Doodguyz, D.Gibson.

KLAX

Domark

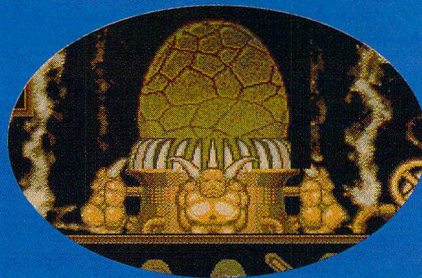
Hit the 4 key and you go straight into level 100. Now all you've got to do is amass another 250,000 points to complete the game.

NINJA WARRIORS

Sales Curve

Hold down the <Alternate> key and type the following to produce all sorts of weird effects: CASABLANCA – Screen goes black and white GENESIS OF THE DALEKS – The screen inverts THE TERMINATOR – Your Ninja body parts explode when you die MONTY PYTHON – Enemies come onto the screen backwards SKIPPY – The enemies bounce repeatedly A SMALLSTEP FOR A MAN (making sure there's no space between SMALL and STEP) – Jumping

(continued on page 90) ➤



■ Keep an egg on the boil and you always have a dragon ready to hatch

➤ you nine gelda a month. Leave your dragon there for now.

Go ahead and advance a month and you find that villages keep on being established and instantly give themselves to you.

Advance about four months with your egg heat on full and you should be getting your hands on about 200 gelda a month. Be sure to check your map regularly. Also check the trader each month and buy as much of the following chemicals as possible: Rasgon, Arolig, Ilege, Celatis, Dlega, Churl, Ulin, Oegenese.

As soon as your four dragons have hatched, put on three more and put up your babies' EYESIGHT, WISDOM and SPEED. Don't worry about strength – that comes naturally. You can afford to turn a blind eye to village rebellions because at any point you can send in a good dragon to make them succumb. But be sure to put up Estor's wisdom to full; otherwise he becomes very thick!

By now you should have advanced many months and be getting at least 400 gelda per month. If you've played carefully you should have many more territories than the enemy and after just a few years you should be able to get your hands on about 70,000 gelda.

Be sure to watch out for the time when one of your opponents sends dragons out to search the land because this means the hunt for the talisman is on.

At this point you have two options. The first is to destroy the enemy completely, casting chronic plague spells on all the enemy villages and constantly attacking them with dragons. Employing this callous method, you should soon wipe out your enemy, and all(!) you then have to do is repeatedly search the countryside for the three talisman pieces. If you find them, well done, sit back and enjoy the end sequence!

The other option is to search the area without killing the enemy. Save your game onto at least three different disks at different months, making certain these are all within the

last five months. In this way, if the enemy should find all three pieces, you still have a good position saved on disk. You can tell if the enemy has found a piece because either he won't move his dragon or there are constant battles going on for just a single piece of land (subtle, or what?).

If you find a piece of the talisman, look over the place indicated by it and load up your last saved game. Now capture the same place – there's less chance of the enemy realising you've found a piece. Eventually you can track down all the pieces and you've won the game.

SPELLS TO TRY

There are many useful spells, but these are some of the more effective:

Dragon director

Rasgon x2 (or 3 for mega Power), 1 heat (grind).

Village director

Celatis x10 (very strong), heat 1, condenser 1 (normal)

Strength

Ulin x3, 1 heat, normal

Health

Oregenese x3, 1 heat, normal

Eyesight

Ilege x4, 1 heat, normal

Wisdom

Arolig x5, 1 heat, 1 cool, normal or Dlega x8, 1 heat, 1 cool, cut

Speed

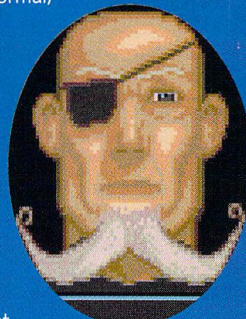
Arolig x5 (or less), 1 heat, normal

Village growth

Churl x9, 1 heat, normal

Village Disease

Sadiel x8, normal, 1 heat (or variations).



■ This streetwise trader has all the ingredients you need for spells

Be sure to remember the following points:

- a) Never attack a village with a barbarian in it: there's a high chance you'll die.
- b) Remember to increase wisdom – it can become very important.
- c) You won't find any talisman unless your dragon has full eyesight.
- d) Speed is essential.
- e) With all your dragon's faculties set on full,

your dragon can usually conquer a village with a population of as many as 2,000 people.

f) Wisdom is vital for your success.

g) If the village has a high population, there's no need to guard it with a dragon.

h) It's a good strategy to improve the population to full in as many villages as you can manage.

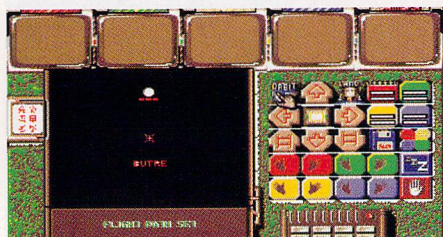


■ Only when all your dragons are fully fit and healthy do you dare venture out and try to conquer new territories

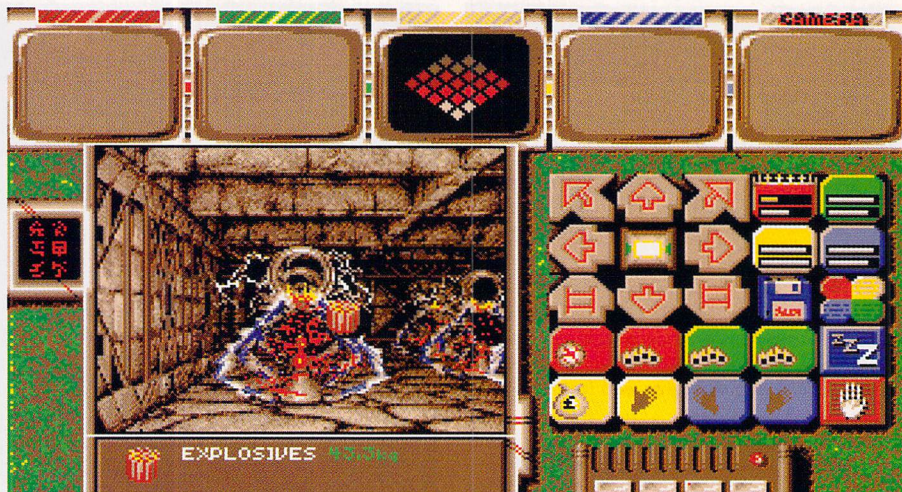
TAKE THE OFFENSIVE

Here are some general tips for *Captive*:

1. Collect all gold dropped by dead aliens: it may come in handy..
2. Open every cupboard: it was put there for a reason.
3. Find the COMPUTER.
4. If the password is not accepted by the computer, look for another.
5. Doors do not function after the generators are blown, so keep them open or you may be trapped.
6. Powerpoints run dry when generators are blown, so get power first.
7. Make sure you are well armed, fixed and fully powered before you leave the base, since you may not find a shop for some time.
8. Use powerpoints as a weapon.
9. Players with higher DEXTERITY hit harder and better.
10. Players with higher VITALITY dodge hits better.
11. Players with higher WISDOM gain more experience.
12. Map well.
13. Initiate all droid chips.
14. Never leave a base without a PLANET-PROBE to enable you to find the next.
15. Throwing heavier objects inflicts more injury, although there are some objects too heavy to lift.
16. Remember to go up skills – this is very important in the early levels because skills are gained fast.
17. Save your game often, making sure to number each saved game differently. You may do something silly like lock yourself in.
18. The green AIR-LOCK doesn't let you out until the generators have been destroyed.
19. Avoid using Tindron heads on droids – their eyesight is poor.
20. Don't just stand there in a battle, keep on the move. Try using the keypad for faster movement.
21. Make notes of what shops sell what. This is very important if you want to save money – and you *do* want to!
22. A left side attack only attacks aliens on the left, whereas the back party attacks down the middle, the left and the right.
23. Put your leader at the back. This means there is less chance of his head being knocked off.
24. Use doors to squash aliens.
25. Don't ever get caught under a raiser wall. Not ever. You've been warned!



■ Third turning on the right after you pass Beta Cygni is Butre, home of Base Zero



■ No, this weird-looking object isn't a Dalek doing a boogie. It's a generator, and every base in *Captive* has a bunch of them hidden somewhere. Your job is to blow them all up

captive

Seen one maze-type adventure game and you've seen the lot... that was until Mindscape's *Captive* arrived. **FORMAT** plunged in, tracked down the game's programmer Tony Crowther and extracted his own *exclusive* tips for the game. Read on!

Basic Game Objectives:

Captive is a quest for freedom. You're imprisoned in a space station which is jointly protected by ten factions of a warmongering society. In order to rescue yourself you must use the ancient briefcase computer and the four droids that you discover on the "other end" of the body-link control system. The system enables remote control of military standard droids across light years of galaxy via invisible electrosonic waves – which means you don't need a long extension lead or change for the phone box.

Although you don't know it when you start, there are ten bases to infiltrate and destroy before you can mount the offensive on the space station and rescue yourself.

Each base has its own distinct design and layout, and each is populated by an individual selection of alien hordes. Before you enter a base you have to find your way "cross country" in a hostile outside world from the landing site to the base entrance.

Level 0

The first level is actually fairly simple once you have mastered the operational functions of the droids and of the Attache Briefcase Computer. It involves ten small to medium-sized bases and a relatively easy space station to rescue yourself from. Early playtesting of the game proved that

a new user could complete the game on level 0 after about three weeks of regular play.

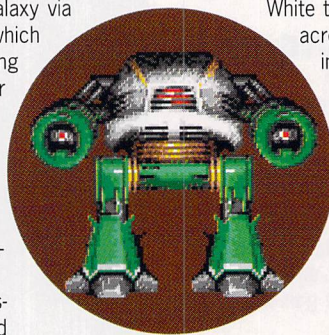
You have to land on the planet Butre (co-ords 008W-072N). Zoom in on the planet (using the right mouse button or the up and down arrows) and click on the large white dot – this is the landing site marker. Click on Orbit and The Swan (the droids' ship) makes its way across the vastness of space into orbit above Butre.

While the ship is making its merry way across the void, it's a good idea to initialise your droids:

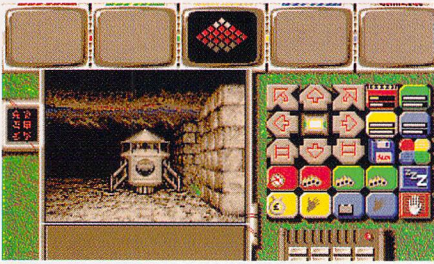
Click with the right mouse button on the droid's status icon to bring up the backpack. Click on the computer chip with the left button and deposit it in the droid's brain (on the left side of the droid's head). This initialises the naming system, enabling you to type in a name for the droid. The name acts as a personality generator that produces the droid's Wisdom, Dexterity and Vitality stats. Repeat this for all four droids and you have a team ready for action.

By this time The Swan should have arrived in orbit around Butre. Click on the right button to bring up the main view again. Click again on the landing site to program the drop destination and then click on the Land icon to start the drop.

Once the lander has landed you see a picture of the first level's planet. Have a wander



■ Concealed deep within the very bowels of *Captive* is the deadly Battle Droid



■ Before the base blows, your Lander appears outside the main door – use it!

around the world and get used to the control system before attempting to enter the base. Don't walk into the water – it is highly toxic here and will damage your droids.

To enter the first base walk up to the door and pick up the clipboard nearby (use the left mouse button on the object in the main view to put it in the player's "hand"). Holding it in the hand enables you to read it on the info screen (the grey section below the main view). This displays the combination of buttons you need to press in order to open the door.

Once it's open, go inside. You're now in the base proper. Pick up the explosives and the clipboard. Walk to the far end of the airlock and use the PUSH control – that is, press the right mouse button on the FORWARD icon – to move the wall and get into the first area of the base.

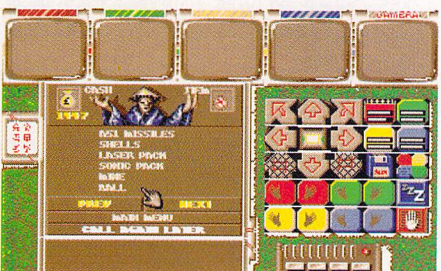
There are many ways

of completing the game, so here is only one way of attacking the problems. *Captive* is so flexible that you may well achieve the same results a different way.

You can find new areas of the base to explore once you identify which walls push and which don't. The ones with the rollers at the bottom are – you guessed it – the rolling walls!

You should come to the generator room fairly quickly. Avoid the temptation to lob in the explosives just yet – there is plenty more to do. Generally the first base can be completed once you have done some or all of the following:

1. Explore the level completely, examine every nook and cranny and open up every cupboard you can find.
2. Collect all the gold you can find dropped by dead aliens. Use this in the shops to buy, sell and repair objects. If you have damaged anything on a droid's body, repair it at the shops.
3. For the first base, it is a good idea to concentrate on increasing your BRAWLING skills



■ The very latest in catalogue shops, these guys make Argos look back-dated

only. This makes you a fabulous puncher and is sufficient for the enemies you encounter at this stage. If you must buy a weapon, go for the BALL – it is re-useable and fun!

4. DEVICES are plugged into the droids and give a readout in the monitor at the top of the screen. A good device to get on this base is the ROUTE-FINDER. This is available from only one shop, so you might have to search for it. It is classified as an OPTIC, but there are seven types of OPTIC device (*be here next issue for the key to them all!*) – just keep buying until you find the ROUTE FINDER. If you buy the wrong thing you can always sell it back for no loss.

5. The shops in a base operate a co-operative banking system. This enables you to leave any gold you collect at one shop and have the funds available at any. However, remember to retrieve the money *before* you blow the base or you'll be somewhat out of pocket.

6. Find the PROFESSOR in the COMPUTER ROOM for the clue to the next planet's location. Kill him for the password into the computer. Click on the computer to activate it. Type in the password to reveal the PLANET PROBE. Collect this – but beware: it weighs a lot, so be careful when you select the droid to carry it – and you're ready for the destruction of the base.



■ Lurking in the water around the bases are hungry Diplodocuses

7. The first level is so easy that it's best to use it as a training ground. Kill anything that moves and gain experience. Make sure you spend this experience on increasing the skills for each droid. Use money to buy devices, mines and ball weapons. Use money also

to repair any damaged body parts.

Once you have explored all of the first base, go back to the generators and blow them up – simply throw the explosive at them from a safe distance. After a short pause they start to explode – which is a good time to run like hell! Use the ROUTE FINDER to get back to the door. Click on the door to get into the lobby. Use the same combination as before to get out safely, but don't hang around – remember, the base is exploding around you!

Once outside, go back to the ship and press UP to board. You can then ORBIT the planet again and go back into space. Put the PLANET PROBE on the planet map and watch it go to the next base. Land there and continue... and happy adventuring!

■ More exclusive *Captive* tips next issue!



■ Battle stations! You're under attack by the mutant broccoli creatures from Hell!

DESPERATE MEASURES

Having problems? Want more help? Try these advanced tips:

1. Carry an extra chest and limbs. This saves running back to the shop.
2. Droid chips can be swapped around.
3. 95% of devices are useful, so buy one whenever you have the cash.
4. To plant mines and cameras, drop them one square in front of you.
5. Mines are very deadly.
6. Balls are re-loaded into your hand when used, if there are any in your backpack.
7. Super-Balls are painful.
8. It can be cheaper to fix an item before selling it.
9. Devices can be used in multiples – that means you can use, say, four of the same device at a time.
10. Buy "Optic Basic" to see how well you are progressing.
11. Buy "Optic 2" to find your way around.
12. You can usually guess how to work three-way switches.
13. You can guess how to work eight-way switches, but they're easier with a clue.
14. 16-way switches really need a clue.
15. Be careful when you push doors: don't seal yourself in or out.
16. The leader throws, so he needs a working right arm and a good grade of robotics to be effective.
17. The leader can use powerpoints as a weapon and use his Dexterity as a power level indicator.
18. Cameras can be detonated as long as the leader has a Dexterity of over 15.
19. Save all clipboards – they can be sold to the shopkeeper.
20. The fixer repairs only to 10% – enough to bring a limb back to life.
21. The fixer cannot fix a droid's chest, since there is no power to drive the device in this event.
22. Zlot weapons temporarily add 30 to your Dexterity for use with the weapon.
23. Don't use armour if you don't have the skill, or it gets damaged very quickly.
24. Keep plenty of ammunition for your guns. Obvious, really...
25. The visor sends out a signal which cannot be blocked.
26. When the shields run out, the devices blow up. However, at 1% they can still be sold to the shopkeeper, so don't use them to the death.
27. Even if a shop doesn't sell shields, it's still able to fix them.
28. If your bullets travel under an alien, use the ANTI-GRAV device.
29. Kill aliens over fire: it protects you from most of their shots.
30. Water turns lights back on in dark areas.
31. Water freezes all mechanical droids.
32. Use ANTI-GRAV boots to reach any shops that are in water.
33. Do not back away from fireballs. Run into them or dodge them.
34. Fireballs can injure the whole party.
35. Use aliens to kill other aliens. They don't have an ammunition shortage!
36. If you kill an alien using a raiser wall, the wall also squashes the bag of gold.
37. Carry a spare head with you just in case the lights go out.
38. Use ladders as a defence.
39. Mines are usually very useful, but they're no good against floating aliens.

DAMOCLES

Novagen

Okay okay, we said we'd never print another Damocles tip in these pages, but Tom O'Toole from the West Midlands has come up with an even faster solution to the game. Take it away, Tom...

Tom's solution takes about 50 minutes from the first landing on Eris to the point where you see the rewards added to the cash held on Benson's panel.

1. Get the Eagle spaceship as instructed and then fly on to 09.02 and take the Antigrav from the basement.

2. Fly to Snow Island 03.00 and find Novatrigger 2 (the cupboard). Pick it up, turn it on and drop it.

3. Fly to the Capital City at 11.08. Pick up the eagle, enter the elevator and go down to the basement.

4. Enter down the arrowed sides of the transporters until you come out on Metis. Moon Base at 00.06. Pick up the transporter, go outside, drop eagle and fly to location 05.06. Pick up eagle, enter the building and then head off to the table to reveal a secret door. Enter, drop the transporter and pick up Novatrigger 4 (the washbasin). Turn it on and drop it.

5. Enter down the arrowed side of the transporters until you get to Ur City at 07.01. Find Novatrigger 1 (the sideboard), pick it up, turn it on and drop it.

6. Return through the transporter to Chaldea at 08.08. Fly to location 06.06 and collect the gold bar from the basement. Now fly on to 04.06 and sell your gold bar. With more cash in your coffers fly on to location 05.06 and buy Novatrigger 3 (the Hi-Fi). Make sure you don't turn it on yet since you already have three turned on.

7. Fly off to Ur City at 09.02 and collect the Novabomb from the basement.

8. Now fly to Icarus, go straight down and land anywhere. Drop the Novabomb. Take off again and fly to a safe distance. Now activate the last Novatrigger and wait to collect your substantial rewards.

NOTES:

1. You need nimble fingers when you're on Metis and Icarus. Since you're without protection you won't survive if you're outside the eagle or a building for more than ten seconds.

2. If you dawdle and are unable to destroy Icarus before Damocles reaches it, you can use the built-in short cut to reduce the flight

time to Icarus. At the end of step 7, press the <Help> key to pause the game. Now hit F10 to quit and you're in a spaceship with Icarus just behind you, showing as a black spot against bright Dialis.

Having completed the mission you can go exploring. Try flying to Dion, Birmingham Island at 09.14 and buy the Acme Universal Suit. This enables you to roam freely without air, in hot or cold locations.

Fly next to 03.14 and use the transporter on the first floor to get to Vesta 04.06 (with the up arrow sides). Now nip up to the third floor and collect the briefcase – this increases your inventory capacity.

Head back to the basement and transporter to Eris Capital City. Next stop: the up arrow. Collect the A-Z Computer from 12.14.

Some suggested excursions:

a) Double your money (or lose it all) at Uncle's Casino on Bacchus Way Station at 01.03. Pick up the 'phone and listen to the message.

b) Turn on the ghettoblaster at Charlene's Disco in Logos City, location 06.03.

c) Read the Mercenary's Book which is on sale at Eris Capital City at 13.15.

d) Find Penn College on Solon Base for an extra lump of gold.

e) Visit the Museum on Cronus. The Guide is located at 05.05.

f) Visit the Trading Posts at Mentor Way Station – you can get a good price for your booty. Sell the second Antigrav (the one you picked up at Eris Key West, location 07.07) at the Post at 03.05.

You can buy the Blue Beacon Locator at location 02.01 for a reasonable 100,000 ECU's. The Locator itself is blue and helps you spot an operating beacon (red, black, and blue) from quite a distance. This includes the one floating in space (and of no apparent use) several days' travel away and far beyond Juno.

g) Try your luck against the defending fighter at the Eris Bank Repository on Tolosa. If you need sights you can find them at Eris Capital, location 01.14.

h) Visit the Eris TV Studio at Velos City. First buy the TV control at the Trading Post at 03.07. Now proceed to 04.01 and play about with the TV on the ninth floor.

i) Have a look in the Novagen Offices on Dion, at Birmingham Island, location 02.11. Read the files and then take a look in the rubbish bin. You need the door key (D) from Annie's Bar at Dion East, 06.00.



■ A simple packet of cheese biscuits can make you immortal in *Ninjabros*...

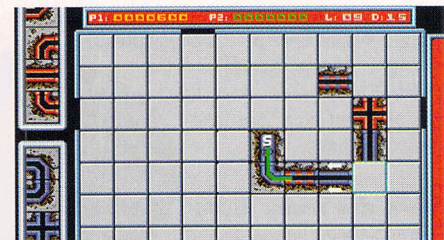
➤ (continued from page 87)

baddies now leap right off the top of the screen. EAT TO THE BEAT – You can now press Q to toggle slow motion mode on and off. If you just want to win, you can hold down the <Alternate> key and type CHEDDAS for infinite lives and MAY THE FORCE BE WITH YOU for infinite energy.

PIPEMANIA

Empire

There's a 50,000 points bonus and if you want to access it just fill the screen with pipes.



■ Never mind linking those pipes, just fill the screen with 'em and earn more points

PROPHECY – THE VIKING CHILD

Electronic Zoo

The four passwords are: "DENIS<E>", "BLIZ", "SHARKMAN" and "NYMHARSW". These transport you to the forest, landbridge, labyrinth and desert respectively.

SIM CITY

Infogrames

Hold down the <Shift> key and type "MONEY" for an extra \$10,000.

STARBLADE

Palace

Here are some helpful hints for completing this space-orientated adventure game.

1. Try to work out a quick and simple trade route which takes relatively little fuel and always makes you a good profit. Hint: try a trade route running from Antres (Uranium and Metals) to Xylgona (Water).

2. Go through all the planets in turn, making notes on the things each one sells, the type of monster or robot in the vicinity and whether you can breathe the atmosphere.

3. Always travel along conventional airways!

4. If you land on a vegetation planet, prepare to be boarded by alien stowaways who do their utmost to rip your ship to shreds – and (surprise, surprise) usually succeed.

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MIDNIGHT RESISTANCE

Ocean

Lee Mansfield from Surrey offers these irresistible tips for completing this gruesome scrolling beat-'em-up

Level One

This should be easy enough to get to grips with and you should be able to get through it in your first go. Just be sure to stay on top of the jeep until you reach the scaffolding.

Level Two

At the first shop try and get three-way extra bullets and Homing Missiles. If you can't, then buy a shotgun instead. This level is quite easy so long as you watch out for grenade throwers. When you get to the machinegunners, lie down above the one in the middle and fire down on him. You can now get the rest from here. When you approach the moving floors, fire diagonally in the opposite direction. When you're at the end of the level and facing the missile launcher, get underneath it and fire while standing on the dustbin lid.

Level Three

Try and get the three-way shot again and the Homing Missiles. If you have enough cash then get the barrier as well. Level three is rather long. When you get as far as the first machine, lie down on the ground and keep firing at it. Occasionally it gets you but most of the time you can dodge it. When you come across rising platforms make sure you get on the middle left and keep firing in one direction. When you get as far as Scuos keep firing left and kill them first. Use your Homing Missiles when you can't take the pace. When you've got four left, wait for the bad guys to come down and stand in the left corner, firing along the ground. Fire straight up, use the homers and you can kill the big Scuo before it gets you. Now stay and fire at the second blade as it comes across the ground. When the eye fires at you, be sure to fire homers twice and you can kill the eye.

Level Four

If you already have sufficient ammo and homers then get an extra life. Ideally you need the three-way shot for this level. This is easy

until you get as far as the planes. When you get this far, jump into the planes and fire your Homing Missiles.

Level Five

You can choose what you want in this shop since it is an easy level. When you get to the helicopter, just keep firing homers until it is dead. The electric beams are easy. When you come to the electric man, go down as far as you can and wait until the screen gets to the floor, then jump down in between the bullets and it's easy to kill him. Be sure to shoot the electric beams first.

Level Six

In the shop you need homers or the level is almost impossible. Once you fall down the first floor just concentrate on the medium blade and once you've got it, lie down and shoot. On the next drop, face one way and shoot the bad guy coming in the same direction. Remember to kill the ones behind you with homers. The next drop has two blades which come at you from both ends. Following this are more men and then four blades coming at you in pairs.

Level Seven

Get the homers again and when the ship passes keep firing homers and moving. Be sure to get the guns in the middle first, then go for the rocket launchers.

Level Eight

Climb the ladder of your choice and shoot six yellow men to get six keys. At the top of the ladder, keep firing homers and shooting. Jump over the caterpillar when it lands on the ground. Once you've killed it, shoot the skull and keep climbing the ladder.

Level Nine

If you have six keys, you can jump up and get every item and release the hostages. In this level, shoot the faces as quickly as possible. When you get as far as the head, fire diagonally at it and when it blows up run across to the left corner. Now fire diagonally right until you succeed in killing it. Get this far and you've finished *Midnight Resistance*!

➤ **5.** Once back on ship, drop the oxygen suit to preserve your supplies of air.

6. When trading, don't sell anything unless you can get a profit in excess of 60 credits.

Giveaways:

It takes an age to discover all the magnetic cards so here's a list of all the cards and details of what they say:

CM.1 Centurion equivalents

I=1, O=7, E=23

CM.2 In Centurion, the son of Gordon is called 11, 1, 25, 13, 6, 22

CM.3 To gain access to Cassandra, place the CFP-099 ROM in the centre of the control circuit. The Cyberpod of Erina is currently holding her.

CM.4 Spec for AD-02 mine features

- Remote controlled
- Unidirectional
- Mainly used to destroy heavy armoury
- Confidential defence number is 058X.

CM.5 The son of the father is the key to the mother planet.

CM.6 Investigation Bureau

Criminal Record
Name: Unknown
Race: Humanoid
Crime: Trafficking in Regenerative Molecules
Zone of Operation: Shervis
Distinguishing Marks: Gasterpode Descent.

CM.7 Minutes of the fourth meeting of the fighting Alpha Z waves are capable of destroying Cephalhydros. The first operational Psychic laser is XMT-03-BK.

CM.8 The powers from the magician can protect you from the *****Y*****KS. (The asterisks denote muddled letters)

CM.9 Pancake Recipe for two people:

- 200g/7 oz flour,
- 2 eggs,
- 600ml/16 fl oz milk,
- pinch of salt.

Mix ingredients well and leave to rest for 15 minutes before cooking in frying pan.

CM.10 Intergalactic Silmarils Catalogue

Mannhattan Dealers
Mad Show
Targhen
Windsurf Willy
Maya
Colorado
Starblade
Made in France (46 Terra)

As for finding out exactly where all this information is needed – well, that part's up to you! **stf**



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So play up, play up, chaps, and play the game: share your information with well over 50,000 fellow ST enthusiasts, and possibly win a packet! Oh, it's so super you could almost shout "Hurrah!"



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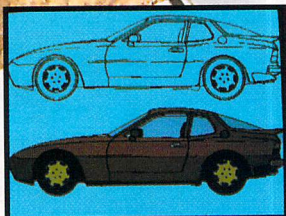
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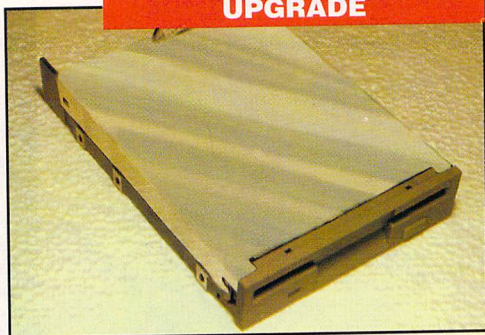
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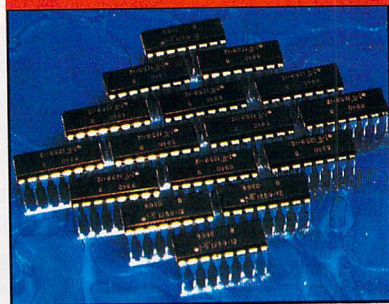


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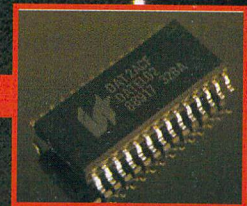
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PO38 - GFA Basic Tutorial
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PO40 - GEMDOS User Guide
PO14 - GEM Information
PO17 - C Programs
PO19 - Sozoban C
PO15 - 68000 Assembler
PO12 - Disassembler, Tiny Basic, C Compiler
PO11 ST Basic
PO01 - ST Basic Programs
PO23 - Fast Basic Programs
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STE DISKS

D96 - Jungle Demo
DO74 - STE Atari France
DO69 - STE Sound Off
DO65 - Movie STE
DO66 - Boing STE (1 Meg)
DO67 - Fantasia (1 Meg)
DO68 - 3D Scroller (1 Meg)
DO84 - ACID
U99 - TOS 1.6 fixer disk

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0983 755800 - blank disks only

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MT SOFTWARE 0983-756056

The above illustrates a small selection from our catalogue. Many of the disks are also available as double sided compilations - please see our catalogue or ring for details.

CODES ARE AS FOLLOWS:-

DS - Double Sided Disk SH - Shareware
1 MEG - 1 meg of memory required
MONO - High resolution NOT STE - Not STE compatible

SINGLE SIDED DISKS £3.00

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OUR NEW CATALOGUE CONTAINS FULL DETAILS OF THE ABOVE DISKS PLUS MANY MANY MORE

PUBLIC SECTOR

Barbara Cartland, move over! Here comes Andy Hutchinson with a romantic twinkle in his eye and a swag of captivatingly cheap disks under his arm

Virginia stared up at Andrew with wide adoring eyes. Her heartbeat raced as he gently caressed her big toe and she knew that this was it – this was true lust. His earlobes pulsed with desire and the hair on the palms of his hands stood on tippy-toes.

"Andy, I lerve you," she gasped, "but unless you can get me software for abait three pineds a disk, I'm afred it (sob) jest won't work."

"Oh Virginia, don't fret, my little baboushka. The Public Domain holds all the disks your heart could ever desire. Now let me take you away from all this..."

UTILITIES

FRACTAL CHAOS

The South West Software Library – Disk 796

Interest in fractals is still high. This disk offers an excellent introduction to the world of chaos geometry and the pretty patterns you can create when you monkey around with it. Julia, Mandelbrot and Chaos geometry are all explored, and once a picture has been created it can be saved to disk or turned into a movie.

STF Rating – 78%



■ It was a lovely cool spring day when Julia met Mandelbrot. Despite promising early signs, however, chaos ensued. Then she turned to the **ST FORMAT** Cover Disk...

RAMBUFFER

ST Club – Disk WPR10

When you start getting seriously into word processing, you soon find that printing out large documents is a very time-consuming business. A printer buffer such as this frees up your machine and lets you carry on working. The accessory also includes a RAMdisk and a free RAM counter.

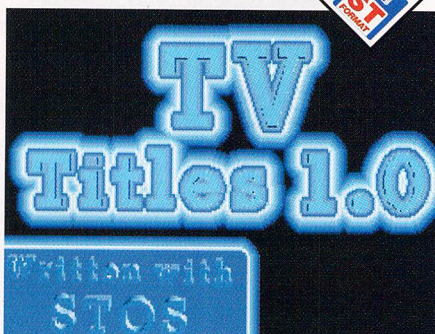
STF Rating – 74%

PROGRAMS FROM USA/CANADA

Caledonia PDL



Spreading the PD net across the Atlantic, Caledonia have come up with a disk of excellent utilities. *Diction* is a novel spell checker which learns only from your documents, and therefore contains only the words you use. All you have to do is confirm that the spelling is correct the first time you use a new word. *Cache v3.5* speeds up your access times whether you have a floppy or a hard drive – and we thought it was so good, we included it free on this issue's Cover Disk. *GDOS Switch* enables you to enter GDOS without rebooting your ST. Best of the crop is *TV Titles*, a



■ "But, Andy, your home videos look so dashed awful!" she said spitefully. "Fear not, little one, I've got hold of *TV Titler*."

PD PERSONAL CHOICE

Each month we ask a Public Domain library boss to nominate his top ten. This month Leigh Caudwell of LAPD lists his ten top selling programs.

1. Care Bears Cuddly Demo – Disk LAD 5
2. Centre folds – Disk LAX 9
3. FCOPY 3 and other utilities – Disk LAU 20
4. System 5 and other games (Compilation) – Disk LAG 44
5. Kylie Minogue sampled music – Disk LAD 64
6. Planetarium – Disk LAM 1
7. Turtles Slideshow – Disk LAD 136
8. What the Butler Saw – Disk LAX 7
9. Calendar Girls – Disk LAX 8
10. Emulators (ZX81 etc) – Disk LAP 10

STOS-written (surprise surprise) TV and video Titler with some very attractive fonts – but you needn't just take our word for it: this too is free on the Cover Disk!

STF Rating – 91%

ART AND MUSIC

MUSIC PACK

Sphinx – £9.95



A novel idea, this. Sphinx have decided to bundle together many of the latest sound programs in one pack. For your ten quid you get seven disks of quality music gear. This includes the better Tracker programs, namely *Noisetracker*, *Audio Sculpture* and a demo of *TCB Tracker*. In conjunction with these programs, there are two disks of songs (modules) and a disk full of sampled instruments. If your preferences tend towards MIDI software, you're well catered for here: the excellent *Cosh Accompanist* program is included. This pack offers excellent value for money and is highly recommended.

STF Rating – 91%

● If you'd like to try before you buy, **ST FORMAT** gave you an exclusive version of *Accompanist*, specially written by Henry Cosh himself, on Cover Disk 16. To order this or other back issues, see page 136

STE SOUND TRACKER

The Demo Club

STE owners get another chance to lord it over STFM owners with this STE-only tracker program. The Fingerbobs demo group have included ten tunes on the disk, all of which are of course in full stereo digital sound. Best of the crop is *Easy*, a nice blast with some new (yes, new) samples. Plug in the stereo and crank up the volume!

STF Rating – 84%

KOZMIC

Floppyshop ST – Disk ART37C

(requires 1 Megabyte memory & Double-sided Drive)

Proving just what marvels can be achieved with STOS, comes this nifty package which generates psychedelic patterns. The programmer, Dave Henniker, has spent a considerable amount of time adding nice touches such as some surprising sampled voices. Once you've



■ They swept over the threshold and pranced gaily up to the computer room. Then, as the full moon sat proud in the sky, they enjoyed a Kozmic televisual feast – and had a good snog as well

generated your acid-house pictures you can save them to disk and leave them on while Hawkwind plays in the background. Well worth a "groovy dude" look.

STF Rating – 87%

THE IRON MAIDEN SHOW

Caledonia PDL

The latest in a long line of slideshow disks available in the Public Domain. This one contains 24 Iron Maiden piccies, digitised from their record artwork. They're all in black and white, but sometimes this works to their benefit. Can't really see this appealing to too many people, but if you're a complete ST-owning Iron Maiden nut then check it out.

STF Rating – 67%



■ Maggie looked around. There was trouble on the way, but she knew that with a bit of old school luck she'd pull through. She leapt out of the shadows and confronted Mr Big with nothing but her wits and a Kalashnikov automatic rifle

ST PROGRAMMER

Riverdene – Disk STP1 ST.PROG



Disk based magazines, when done properly, can be extremely informative publications. This particular offering is one of the best I've seen in a long time. It's on the subject of 68000 programming, and the high quality editorial content is backed up with slick layout. Also on the disk is a game, an assembly language, three accessories, some STOS accessories and Neo-chrome Master. Check it out.

STF Rating – 91%

MUSIC CONVERTERS

Riverdene – Disk MUS831ST

It's all very well having loads of excellent Tracker sounds available, but what if your

favourite program can't load them? This disk enables you to convert a sound sample from one format (say AVR), to another (say raw noise file). This means you can lift samples from other programs and convert them to a format your favourite music program can use.

STF Rating – 70%

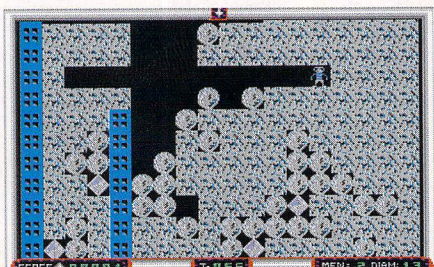
GAMES

DOUGLAS ROCKMOOR

Budgie Licenseware – Disk BU52

One of the best games ever to appear on the old 8-bit computers was a little program by the name of Boulderdash. This is the PD ST version of that game. You've got to guide the hapless Douglas around a level, collecting the diamonds and avoiding the monsters. Sounds banal, plays great.

STF Rating – 81%



■ Douglas de Rockmoor cast a wary eye around the cave. He knew that if he was to rescue Virginia from the Philippino smugglers, he'd need a lot of diamonds

OVER TO YOU...

Yes, there are some dazzling Public Domain programs available, but only a fraction of what's out there can possibly cross our desks. So if you've come across a particularly noteworthy PD program that you think the world should know about, why not review it for us? Who knows! It could be your first step into the glamorous, exciting, generally quite scandalously underpaid world of journalism!

Your review must be no more than 200 words (and you know we'll run a word count program on it to make sure), and it should explain what the program does and what's so special about it. Remember to include full details of where you got it as well.

Now here's the tricky bit. We need your review on disk as an ASCII file, without hard carriage returns at the end of each line. Include a copy of the program itself, and a printout of your review as well if you possibly can. Don't forget to add your name and address on everything and state which PD library you got the program from. Then kiss the lot goodbye ('cos we ain't gonna send it back, no way) and send it to: PD Reviews, ST FORMAT, 30 Monmouth Street, Bath BA1 2BW.

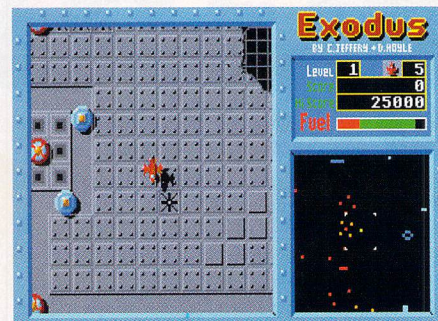
Now, in the old days people would have paid us for the privilege of seeing their names in print in our august journal, but we must be going soft in our old age – we'll pay you a whacking great £25 for any of your reviews we publish. I don't know, kids these days, don't know how lucky they are, ee by gum, when I were a lad, etc etc...

EXODUS

Budgie Licenseware – Disk BU41

The Budgie boys strike again with this multi-scrolling shoot-em-up, in which you guide a ship around an alien landscape. Enemies include spaceships, tanks and ground batteries. A well programmed and effective game which enhances Budgie's reputation.

STF Rating – 85%



■ The spaceship rocked with the force of the explosion. Captain Cohddpeece spun round to see if the princess was all right. "Oh Exodus!" he swore. Horrors! She'd broken one of her titanium fingernails!

ST VEGAS

LAPD – Disk LAG 10

Reformed gamblers, check this disk out. If you're tired of frittering away all your money on the fruit machines or the ponies, then spend digital money instead. Black Jack, Poker, Roulette and Slots are all available. Can't really see the point of this kind of game, although the Poker is quite good fun. Nice graphics and a polished style.

STF Rating – 71%

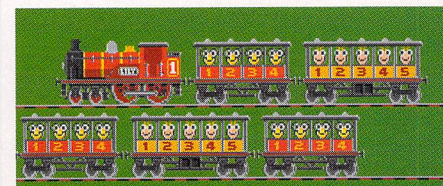


■ The two poker partners eyed each other across the table. Was she bluffing, did she have a Full House or did she just have the hots for him in a very major way?

EDUCATIONAL PD GAMES

Trust PD – Disk 10

Three excellent educational games grace this disk. They're all mouse controlled and very



■ "Pishdakoof, pishdakoof, pishdakoof," Ivor said as he pulled into the station. Pensively he paused. "I've really got to change my scriptwriter," he thought. "I wonder if Ben Elton's available?"

Pdom PD Atari ST/STE Public Domain & Shareware Software

Suppliers of Public Domain and Shareware software for nearly 5 years, watch out for imitations!
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APPLICATION

- **MP7 - Home Business Pack:** DSD. Datahandler and First Base 2 databases, Personal Database a 10 address book, STSheet and Sheet 2 excellent spreadsheets that include graphics and Lotus 123 compatibility, STWriter Elite the word processor and Double Sentry the accounts package. All fully working and full featured. A 3 disk pack for £750!
- **A48 - UNITERM V2.0B** full. THE Comms package for the ST.
- **BPRO1 - CSR.** The ELECTRONIC BANK STATEMENT fully featured personal accounts.
- **A96 - DSD. SHEET V2.0.** powerful all features spreadsheet.
- **A108 - DSD. 1MB. B/STAT** a sophisticated graphing and statistical analysis program.
- **A121 - POOLS - Expert Results Predictor v2.5.**
- **W2 - STWRITER ELITE V3.6** the word processor.
- **W5 - MICRO-EMACS v3.925** text editor.
- **A125 - DSD. 1MB. OPUS V2.10** very powerful spreadsheet and charting program. Requires GDOS which is on disk A163.
- **A138 - DOUBLE SENTRY V0.5** the accounting program.
- **A166 - PERSONAL DATABASE** an excellent address database system. The PD version only allows 10 records but the Shareware version is unlimited, details on the disks. VANTERM V3.71 excellent all features communications program does every thing except split baud rate. RELATIVE TREE the genealogy program.

FONT

- **A45 - STAR NL10/LC10 FONT DESIGNER v1.1** with 21 fonts.
- **A110 - CALAMUS FONTS** disk. 9 PD fonts for use with the DTP package Calamus: Facade, Fura, Greeny2, Hebrewy, Manvilly, Math, Peignoy, Silicy and Steely.
- **A135 - GEM FONT MASTER** by J.Millar the GEM font Editor.
- **A137 - Over 40 GEM GDOS** fonts.
- **A175 - Over 70 GEM GDOS** fonts.

EDUCATION

- **A47 - CSR. KIDSGRAPH, KIDSGRID2, KIDSMUSIC, KIDSPIANO, KIDSNOTES** - graphics and music/sound programs for children.
- **A100 - CSR. KIDPOTATOE, KIDABC, KIDSKETCH, KIDSTORY.**
- **A101 - CSR. KIDSONG, NUMERICAL GO ROUND** - excellent animated maths program, NUMBER MAZE.
- **A177 - CSR. KIDSHAPES PLUS** a graphic program for the older child. KIDPUZZLE features 12 pictures.
- **A178 - CSR. NOTSTE. CAN YOU SPELL.** Talking spelling trainer.

UTILITY

- **MP1- STARTER PACK** for the new STer. STWriter Elite the word processor, Datahandler and Firstbase the databases and NEOchrome the drawing package. Also utilities: RAM disks, spooler, picture converters, desktop accessories, monochrome screen emulator, colour screen emulator, Auto loader GEM, extended disks formatters and loads more. 3 disk pack for £750!
- **A10 - KERMIT kit**
- **A31 - 3 dozen 1ST WORD** printer drivers.
- **A41 - MONOCHROME** monitor emulator v5. NOTSTE. CMFONTS converts Macintosh fonts to ST GDOS format. DEFORMATTOR - this program deformats your disks!
- **A88 - DCFORMAT v3.03** THE ST disk formatter. DISKMOD - writes MSDOS boot sector. MEG A MINUTE Elite v2.1 HD backup.
- **A90 - SUPERBOOT v6.0** THE ST Boot program.
- **A91 - FILE SELECTOR v6.0** replacement file selector. VIRUS KILLER v2.01 excellent virus detector and killer.
- **A97 - MMR. STICKER III.** THE disk label program.
- **STW V4 - FSELECT v3/1989** replacement file selector. ICONIC ACC allows you to design icons and assign them to a file.
- **A109 - QUICK DISK, QUICKFIND v1.5. QUICKINDEX v1.5. QUICKST v1.2. QUICKVIEW v1.3. QUICKINF v1.3. QUICK LABEL V1.1. QUICKPRINT.**
- **A111 - HEADSTART v1.1** excellent program that allows you to auto-boot ANY type of program from your AUTO folder.
- **A119 - FLYING START v1.04** 1200/75 comms Prestel.
- **A128 - RECOVER** is a program that copies any number of specified sectors on a disk to a named file on another disk.
- **A134 - BOOT DRIVE SELECT** select a drive to boot from when you reset your ST. GOACC select Desktop Accessories.
- **A156 - DSD. MMR. PLANETARIUM.** THE star planets package.
- **A157 - CUSTOM FORMATTOR** multi featured disk formatter. BOOT SECTOR STORAGE system allows you to store boot sectors from many disks as a file on 1 disk.
- **A158 - CSR. Complete Amateur Astronomy Guide.**
- **A159 - Address Book. Database. First Base. Datahandler.**
- **A163 - GEMINI V1.1** desktop replacement.
- **A167 - BIG COLOUR EMULATOR** for Monochrome monitors.

- **A168 - ARCGSH V2.1** a shell for any program is already setup for ARC, ZOO, SHAR, UUD and UUE excellent. BYTEFREE v3.3 displays how many bytes are free on all drives. DISKINIT activates a 2nd drive without reset. DISK MECHANIC v1.0 disk analyser, copier, formatter, sector editor etc all in one very powerful.
- **A171 - RECOVERABLE TRASHCAN** retrieve deleted files.
- **A173 - ARCHIVER DISK.** ARC V6.02 archiver. ARC shell V1.98. LHARC V1.13. TURBOARC. ARCIT archive entire disks.
- **A174 - DCOPY v3.12** excellent disk utility features include: copy, move, erase, lock, hide, display, ARC and unARC. BIGSCREEN allows you to use GEM windows larger than the actual screen. FILESPY V1.2 file browser with search.
- **A176 - STARTERM V1.11** the brilliant comms package, features: VT52, VT100, ViewData, XMODEM.
- **A186 - DOCDISP** the best document display on the ST features load picture and a non case sensitive search facility! FCOPY 3 the excellent disk copier, formatter and virus checker.

GAMES

All require a colour screen.

- **MP2 - Games Pack 1:** DSD. Monopoly, Fruit Machine, Cribbage, Poker, Solitaire, Tunnel Vision, Reflex, Checkers, Devils Tomb, Death Star, Battle Ships, Zephyr and others. A 3 disk pack for £750!
- **MP3 - Games Pack 2:** DSD. Star Trek, Tennis, Patience, Fire Storm, Laser Chess, Mile Stone, Azarian, Barn Yard, Space Invaders, Space War, Lunar Lander, Bridge III, Race Cars, Monkeys and Balloons, Spectral Sorcery and Give Us A Break. A 3 disk pack for £750!
- **G23 - 1MB. BOLO!** Absolutely brilliant game with excellent graphics in the Arknoid mould only better.
- **G86 - DSD. Tennis!**
- **G95 - CHANCE** a good shoot 'em up with lots of action.
- **G96 - MUTANT** excellent platform game.
- **G97 - DSD. The Star Trek** game by Eric Tronics A full graphics game with sampled sounds! 1MB
- **G107 - PATIENCE** by Eric Chapman an excellent card playing game includes Golf, Little Spider, Calculation, Siege, Raglans.
- **B5 - PRO DARTS** 501 down.
- **B17 - BALL ZONE** an incredible Arknoid type game, only better.
- **B12 - ACE INVADERS** the DEFINITIVE Space Invader!
- **B13 - ZENITH** a space combat for two players.
- **B11 - MAELSTROM** excellent space shoot-out.
- **B14 - GOLDRUSH** a multi-level platform pursuit.
- **B17 - MAKE A BREAK** trivia quiz.
- **B18 - PARABELLUM** excellent platform game.
- **B22 - BANDIT** slot machine with nudges up and down etc.
- **B27 - PSICOTIC** a space shoot 'em up.
- **B23 - SPACE BLOB** an immensely enjoyable platform game.
- **B30 - A QUEST FOR GALAXIA** an excellent Galaxians clone!
- **B37 - MR DIG** dig tunnels to collect the cherries.
- **B35 - HOSTILE RECEPTION** a Xenon-type shoot-em up.
- **B39 - Onyx** an excellent shoot 'em up with many varied and excellent sprites! All in 68000 machine code.
- **B40 - Dizzy Lizzy** across between Pacman & Boulderdash.
- **B41 - Exodus** awesome shoot 'em up with fantastic graphics!
- **B44 - Exterminate** if it moves KILL IT! A shoot'em up.

GRAPHICS

- **MP4 - Graphics Pack 1:** DSD. CSR. ANI ST the excellent animation package, fully working allows you to create your own animations! Pearle the ray tracing package with full examples, Mini Paint the excellent fully featured painting package, NEOchrome the excellent painting program, and picture converters. A 3 disk pack for £750!
- **MP5 - Graphics Pack 2:** DSD. CSR. Master Painter the excellent fully featured paint package that includes multiple screens, Colour Burst II the 800/3200 shades on screen at once paint package, Fine Line the drawing program, Fractal Zoom the most comprehensive fractal generator on the ST, the Atari Image Processor, MegaBlit the paint package, Studio and VanGogo 2 excellent paint packages. A 3 disk pack for £750!
- **GR6 - Degas Support Disk:** 155 fills, 10 brushes, 7 fonts & 24 printer drivers.
- **GR11 - Disk** full of picture utilities: TINY. STUFF v3.4 and TINY VIEW v4.21. PICSWITCH v0.7 and more.
- **GR14 - MMR. PUBLIC PAINTER v0.1** Degas & IMG compatible.
- **GR17 - Picture converters.** To & from Print Master, Degas, NEO, Tiny, IFF, SPEC512, IMG, AIM, Postscript, Spectrum512 & GIF.
- **GR20 - IMG utilities.** Convert Degas, Tiny, NEO, MACPaint, Spectrum to a mono IMG file. Also an IMG viewer & slideshow.
- **BPRO3 - CSR. SPRITE MASTER** a professional sprite editing package tailored to suit most programming languages.

- **BPRO5 - CSR. DSD. Sprite Portfolio** 600+ top quality sprites.

LANGUAGE

- **L1 - 68000 ASSEMBLER, XLISP, STLOGO, TINY BASIC.**
- **L3 - ADVSYS** Adventure writer language.
- **L7 - XLISP v1.7** includes manuals.
- **L8 - FORTH** from Bradley Firmware.
- **L9 - ST ICON v6.3**, based on SNOBOL4.
- **L10 - LITTLE SMALLTALK.**
- **L13 & L14 - MODULA-2 DEVELOPMENT SYSTEM v1.0.**
- **L15 - DSD. SOZOBON C** Compiler.
- **L17 - DSD. AGT V1.19.** Excellent adventure writer.
- **BPRO2 - DSD. Budge UK 68000 Programmers Library V4.2.**

MUSIC

- **M9 - MUSIC WRITER** create music on screen.
- **M15 - THE ACCOMPANIST V2.3** a 16 Voice MIDI Sequencer. A fully working MIDI sequencer by Henry Cosh.
- **M18 - SOUNDTRACKER** player and SoundTracker modules.
- **M19 - SOUNDTRACKER** player and SoundTracker modules.
- **M20 - SOUNDTRACKER** player and SoundTracker modules. Also documentation and some source code in 68000 and GFA basic on SoundTracker formats and different frequencies.
- **M21 - NoizTracker** fully working with Modules.

DEMOS

- All require a colour screen and a double sided disk drive.
- **D221 & D222 - NOTSTE.** DRAGONS LAIR DEMO by IRS.
- **D197 - NOTSTE.** Space Ace.
- **D202 - NOTSTE.** Predator demo by The Islander.
- **D125 - NOTSTE.** The Care Bears Cuddly demos.
- **D128 - NOTSTE.** The Wattaheck demo.
- **D129 - NOTSTE.** The Swedish demo includes SYNC & TCB.
- **D122 - NOTSTE.** The Union demo!
- **D77 - Exceptions** 4 BIG demo.
- **D91 - AMIGA DEMO!**
- **D108 - 1MB.** Calamus product demo.
- **D123 - The Snowman** demo. 1MB.
- **D138 - 1MB.** Startrek Animation with digitised speech.
- **BD1 - Mind Bomb.**
- **D176 - The Care Bears 'So What Demo'.**
- **D189 - Swedish New Year** Demo 2.
- **D207 - The SNOWMAN** demo the 1/2 MB RAM version.
- **D210 - 1MB.** The Star Wars Walker I demo. Excellent Animation and sampled sounds.
- **D211 - 1MB.** The BatMan demo by RAM KILLER.
- **D213 - 1MB.** The Star Wars Walker II demo. Excellent Animation and sampled sounds.
- **D217 - The DELERIOUS DEMO II** by the Overlanders.

STE DEMOS.

- All require a colour screen and an Atari STE.
- **D144 - The Official Atari France** STE demo!
- **D214 - Sound OFF.**
- **D228 - AN COOL** from The Care Bears STE demo.
- **D229 - 1MB.** The Jungle demo!
- **D230 - MovieSTE.**
- **D231 - 1MB. BOING STE.**
- **D232 - 1MB.** Fantasia.
- **D233 - 1MB. 3D Scroller.**
- **D234 - 1MB.** Psychedelic House II By The Overlander. Aciiid!!!

PDOM CLIPIT

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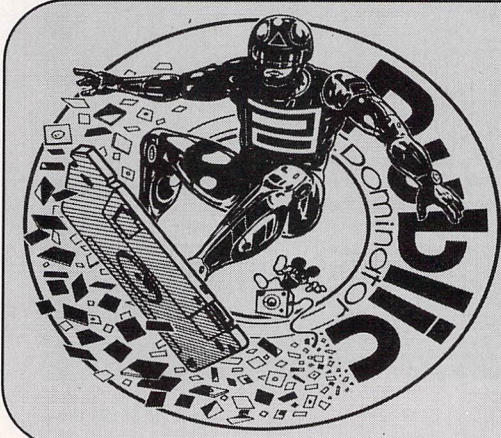
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instinctive. The first is a time teaching program which displays an analog watch on which you must enter the correct time. *Train* is a maths tutor which uses a train full of people as the graphical interest. *Booksearch* is a map co-ordinates game where you have to find a location on a grid.

STF Rating – 86%

DEMOS

SKID ROW

Trust PD – Disk MEG37

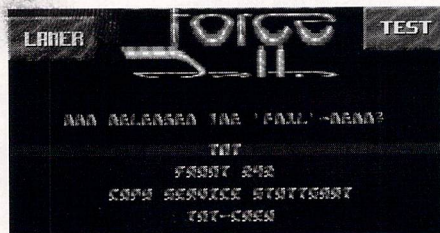
Kicking off this issue's demo section is a multi-loader from the Alliance. To enter the sub-demos you wander about in a 3D *Dungeon Master* type maze, which quickly becomes extremely bewildering. The demos themselves are quite well programmed, but not really up to the standards of the big boys. Worth a look anyway.

STF Rating 69%

SYNTAX TERROR

MPH – Disk G36

Written at the recent demo coders' convention in Holland, this disk comes from Delta Force of



■ "I must know, darling: are you a lamer?" Virginia felt herself seized with *Syntax Terror*. She really didn't know how many clock cycles there are in Mulu. He made her feel a Very Foolish Person Indeed. Oh, demo writers are such insecure little boys



■ "Oh Andy," Ginny gulped, "have you seen the *European* demos from the Overlanders?" Andy sighed. He hadn't seen them, and now he realised that this relationship would never work. A tear formed in the corner of his eye and his follicles quivered with emotion...

the Union. There's no flashy multi-load menu and some of the demos are a bit bland, but it was all programmed in 24 hours and it's certainly an impressive example of what you can churn out if you know how. Best demo on the disk is the lamer's test: try your knowledge of the demo scene and face a rude shock if you don't know your onions (I passed...)

STF Rating 72%

EUROPEAN DEMO

Riverdene PDL – Disks 837ST, 838ST



Coded at the same convention as *Syntax Terror*, this Overlanders' effort is brilliant. In a jazzy loader section you guide a barbarian woman to the appropriate sub-demo. The best bits of code are undoubtedly those by the Overlanders themselves. High points are OVR1, the Xbios Men's

tracker and vector screen and OVRiv, the best 3D I've seen in ages. Gnarly.

STF Rating – 94%

GFA BASIC DEMO

LAPD – Disk LAD153

The Overlanders took a novel approach to this demo and turned anti-assembly code. This entire demo is written with GFA Basic v3. The speed of some of the screens is amazing, making the STOS demos look pretty rubbishy. OVR have included a *Who Dares* demo which is a BASIC copy of TCB's groundbreaker. If you're into programming in BASIC but aren't too sure how far you can go, check this out.

STF Rating – 82%

■ This issue *FORMAT* continues its special review of Public Domain educational software – see page 138

Where to get it – the *FORMAT* PD library directory

Advent Software, 16 Knox Close, Norwich NR1 4LN
Alpha Computing, 32 Meadow Drive, Halifax, W Yorks HX3 5JZ

Atari Advantage, 56 Bath Road, Cheltenham GL53 7HJ ☎ 0242 224340

Awesomedemos, 3 Mason Road, Seaford, East Sussex BN25 3EE

B-Soft, 33 Corsham Road, Calcot, Reading, Berks. RG3 5ZH ☎ 0734 416492

Budgie UK, 5 Minster Close, Rayleigh, Essex SS6 8SF

Caledonian PDL, 250 Oldtown Road, Hilton, Inverness, IV2 4PT ☎ 0463 225736

Demo Club, 23 Alma Place, Spillsby, Lincs PE23 5LB ☎ 0790 53741

Elmsoft, PO Box 17, Loughton, Essex IG10 2EE

EM PDL, 54 Watnall Road, Hucknall, Nottingham NG15 7LE ☎ 0602 630071

Farmic Enterprises, 75 Chestnut Grove, Coleshill, Birmingham B46 1AD

Floppyshop ST, 45 Provost Graham Avenue, Hazelhead, Aberdeen AB1 8HB ☎ 0224 312756

Freaks PDL, 29 Leap Valley Crescent, Downend, Bristol BS16 6TQ ☎ 0272 570122

Goodman PDL, 16 Conrad Close, Meir Hay Estate, Longton, Stoke on Trent, Staffs ST3 1SW ☎ 0782 335650

HAL Computing, 15 Regents Terrace, Leeds LS6 1NP ☎ 0532 435805

Kad-Soft, 2 Ebor Paddock, Calne, Wilts SN11 0JY ☎ 249 817174

LAPD, 80 Lee Lane, Langley, Heanor, Derbys. DE7 7HN

Lavery Computer Services Ltd, 46/47 Pall Mall, London SW1Y 5JG ☎ 071 930 0697

Metropolis PD, 38 Howick Park Drive, Penwortham, Preston PR1 0LU ☎ 0772 727528, 748422

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Page 6 Publishing, PO Box 54, Stafford ST16 1DR ☎ 0785 213928

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PD Rebels, 81 Springfield Road, Rowde, Near Devizes, Wilts. SN10 2PD

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Sphinx Software, Erw Fynydd, Carmel, Llanelli SA14 7SG

ST Club, 9 Sutton Place, 49 Stoney St, Nottingham NG1 1LX ☎ 0602 410241

STOS/Amos PDL, Sandra Sharkey, 25 Park Road, Wigan, Lancs WN6 7AA ☎ 0942 495261

NG1 1LX

TRuST PD, 18 The Park, Southowram, Halifax, HX3 9QY ☎ 0422 341606

West London PD, 8 Berkeley Road, Hillingdon, Mdx. UB10 9DU ☎ 0895 53521

Wizard PD, 178 Waverley Road, Reading, Berks, RG3 2PZ ☎ 0734 574685

WoolleySoft, Humbleknowe Cottage, Ramolye, Dunblane, Perthshire, Scotland FK15 0BA

and, er, that's it, really. Anyone else, just let us know.

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SD 004 SO WATT - A collection of quality demos from the Carebears (D/S)
SD 005 WHATTACHECK - Another good set of demos from the Carebears (D/S)
SD 006 CUDDLY DEMO - Brilliant demo with many parts (D/S NOT STE)
SD 021 STAR WARS DEMO - Good digitized sound and animation sequences (D/S)
SD 023 SALON DE LA MICRO - Good music demo. (NOT STE, better with MEG, D/S)
SD 024 BATMAN MOVIE (3 DISK SET) - Anim's and sound from film (this demo requires disks SD 025 and SD 026 to work properly (D/S)
SC 015 ROBOCOP 2 DEMO - Collection of pix & samples from the film (D/S)
SM 006 TCB TRACKER DEMO 1 - 4 channel sampled music! Who needs Amiga?
SM 007 TCB TRACKER DEMO 2 - Another musical feast. Extra quality on STE.
SM 018 TUFTY HUMANOID MIX - Dancing stormtrooper to digit-tune!
SM 001 BATTLE - Brilliant! Complete Prince song on 1 disk! (D/S)
SM 006 TEENAGE MUTANT TURTLES - Turtles make it to the ST (D/S, 1 MEG)
SM 015 RUDE DEMO (3 DISK SET) - Amusing Pub D J Rap, rather rude! (This demo requires disks SM 016 and SM 017 to work properly. (D/S, 1 MEG)
SM 031 LOVEPITY DEMO - Quality music demo, pity about the GFX! (D/S, 1 MEG)
SM 027 ROBOCOP - Digitised gfx & SFX from the film. Well put together (D/S)
SM 000 WALKER DEMO II - The Walker takes Chicago (D/S, 1 MEG)
SM 003 SNOWMAN DEMO - Good animation & music from the film (D/S, 1 MEG)
SM 004 'THE RUN' - Great animation of a police chase (D/S, 1 MEG)
SM 007 CALIFORNIA RAISINS - Dancing raisins! (D/S 1 MEG)
SM 011 SCANNERS - Very effective animation of exploding head! (D/S, 1 MEG)
SM 010 DPAINT ANIMS NOT - Taken from Tobias (Amiga fame) animations (D/S)
SR 002 VIZ SLIDESHOW - Full of hand-drawn artwork from the comic

STE ONLY DEMOS (All STE disks are DOUBLE SIDED 1/2 MEG unless stated)

ED 001 THE STE DEMO - One of the first demos to use Stereo Sound
ED 002 BOING STE - Featuring a Big bouncing ball (1 MEG)
ED 003 AN COOL STE DEMO - 4096 cols, Hardware scroll, Stereo FX (1 MEG)
ED 004 3D SCROLLER - Shows what the STE's blitter can do! (1 MEG)
ED 005 JUNGLE DEMO - Great graphics and Stereo sound effects!
ED 006 PSYCADELIC HOUSE - No, not a spelling error, it's ACIDID
ED 008 STE SAMPLES - Various good effects with mixing desk controls (1 MEG)

ST GAMES (All supplied on SINGLE SIDED disks unless otherwise stated)

SG 005 DIE ALIEN BLOB - A good scrolling shoot-em-up
SG 007 NAVAL BATTLE - A good version of the classic battleships game
SG 008 VIRUS - Save your computer from the lurking virus! (NOT STE)
SG 010 HAUNTED HOUSE - A fairly standard (but playable) platform game
SG 012 JOUST - Brilliant game. Try and dismount your opponents!
SG 014 ENGLAND TEAM MANAGER - Think you could do better?
SG 015 A DUDLEY DILEMA - A great adventure game
SG 016 BERMUDA RACE - A great sailing game. Get the seaisick pills ready!
SE 000 SHIPWRECK - An excellent educational maths game with graphics

UTILITIES

EU 000 STE BOOTUP - Allows your STE to boot up into medium resolution
SU 000 HOME ACCOUNTS - Great little accounting program (NOT STE)
SU 002 VIRUS KILLER - A virus killer with sampled sounds!
SU 029 DATABASE MASTER - A powerful and easy to use database
SU 500 FONTRIT - Create your own custom desktop fonts! (D/S)
SR 000 ANI ST - Full working version of this excellent animation package.

COMMERCIAL DEMOS

SU 004 AUTOROUTE DEMO - Usable demo of the computerised map.
SC 003 DELUXE PAINT ST - Usable demo of this excellent art package.
SC 017 280 CROSS ASSEMBLER - Usable demo of commercial package (No save)

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the kandy koloured tangerine flake streamlined picture show



*Will Matte Finish? Is Phil Pattern a display Cabinet member?
Gallery host Neil Jackson picks the gloss off your pixels*

There's a feast of eye-catchers on display this month, along with the tricks and tips that were used to create them, direct from the artists' mouths. *KANDY* takes the best artwork that pops through the letter-box, and unravels the mysteries of drawing, filling, shading and cycling (eh? but that's bikes innit? – Ed). Then it passes these techniques on to you, so you can see how good pictures evolve and learn how to do it yourself.

And then you take over. In your awe-struck state, you reach for that old, dusty art package and fire it up. With clear vision and total knowledge of the masterpiece you're about to draw, you begin. Steadily working and re-working, you save a step-by-step history of your picture in

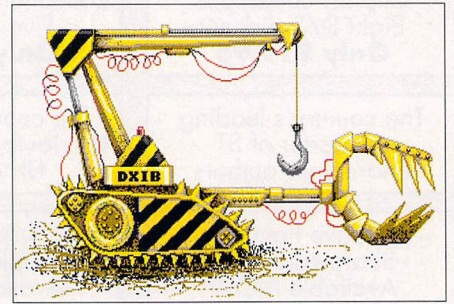
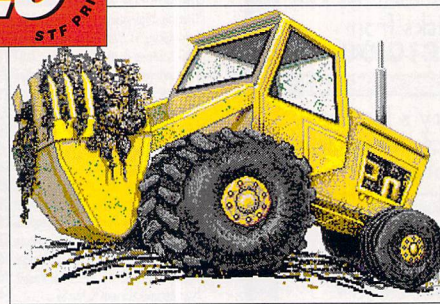
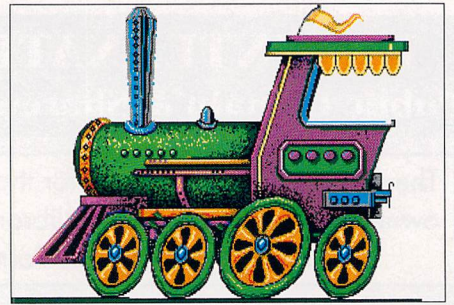
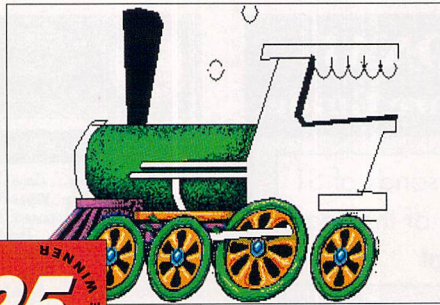
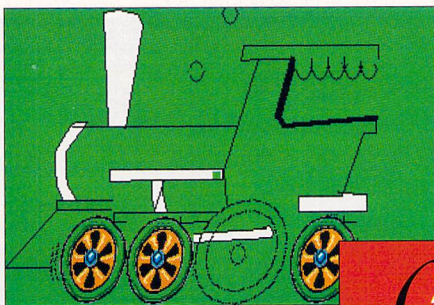
progress, jotting down your new-found methods, your secret styles. Hours later, it's over. Hastily scribbling your last few insights onto a piece of paper, you know that fame is only a matter of inches away. Tentatively, you seal the envelope that contains your brainchild and send it on its way to *ST FORMAT*...

But seriously, it *could* be you next month! All it takes is a little knowledge (provided here) and a lot of enthusiasm (your department!), and you too can be an artist. Your first efforts might not be the best in the world, but they'll be special to you, and always better next time.

So get going! You're bound to discover something that makes art-life easier, or a new effect – and then, who knows, perhaps you

could win £25 for your trouble. You don't need any experience to be a winner. Just make sure you tell us the name of the art package you used and some meaty tips (either on paper or as a word processor file) and send a copy of your pictures to the address below. Please make sure it's a copy, 'cos we can't return the disk you submit. It's not that we need any more blankies (Hell no! I can hardly see over the pile!), but we do keep all submissions, just in case we can't get all the goodies in one issue.

Okay? Now it's over to the artists. But before you go, remember to send your virus-free, named-and-addressed picture disks to *GALLERY, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW. stf*



£25
WINNER
STEP PRIZE

First up this time out is this month's £25 winner, **Julie Willoughby**, a textile and plastic artist from **Gainsborough**. Although Julie obviously has a keen eye for design (as her profession suggests), she admits she's new to the world of the ST. Not that this prevents her from having a go, with impressive results despite the fact that the art package she uses is more awkward than most. Julie, the floor's all yours...

What I know, I've picked up from other people, so I'm still very much experimenting. The only

art package I've used is *Flair Paint*, which I find suits me very well, although I'd like to try out this *Degas Elite* which I've heard so much about.

Most of my computer drawings are "cartoony". Computers are wonderful for exaggerated emphasised stuff. I usually start with basic shapes using the "shapes and lines" feature. I then flip, rotate, shear and squash these using the "resize" feature.

These shapes are then filled in a basic colour and "cut and pasted" into position – what

a relief *not* to have to draw every wheel on a 16 tonne artic! Details are done using the magnification and stencil facilities, and as you'd expect I have to change the original *Flair Paint* palette since they seem to have omitted a decent red or yellow.

Although Kevin the Steam Engine is the only picture which has been broken down into stages, the same method of creation is used for all these vehicles.

■ **Flair Paint £24.95 from Database Software ☎ 0625 878888**

Stuart Wheelwright from **Turnditch in Derbyshire** looks to the stars for his inspiration. Using *Degas Elite*, his first move was to... Why don't you tell 'em, Stuart...?

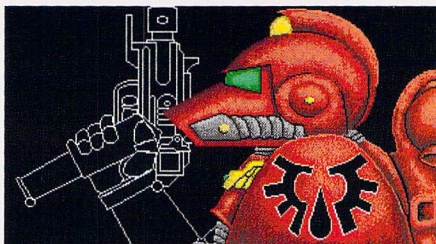
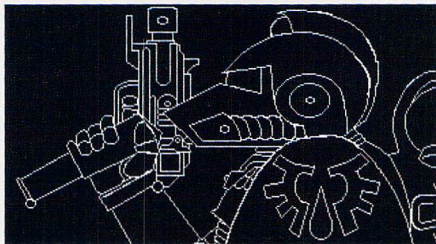
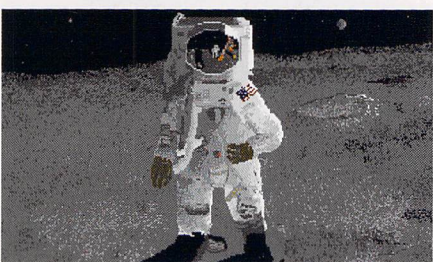
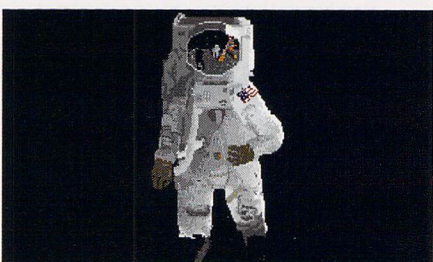
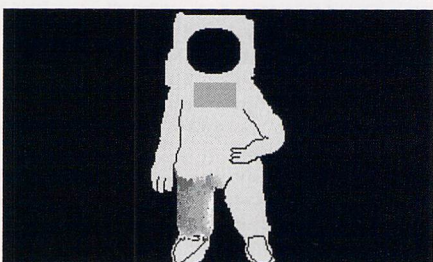
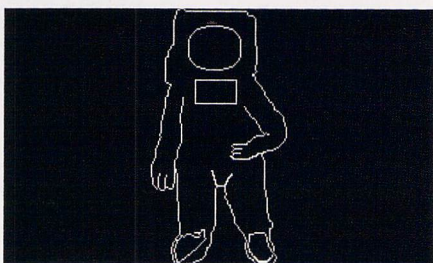
First I set up the colour palette, and drew a rough outline using the slowdraw function. Then I touched it up using zoom mode. Using the box tool I drew the control panel on the figure's chest. Next I zoomed in to his helmet and drew a freehand circle (dot by dot), for his visor.

I filled the man in the relevant colours, then using zoom I shaded him from the legs upwards. I continued shading in the right places until the whole body was finished.

Next I added the details (using zoom again), such as the flag, the reflection in the astronaut's visor, his control box, pipes, straps, gloves and boots.

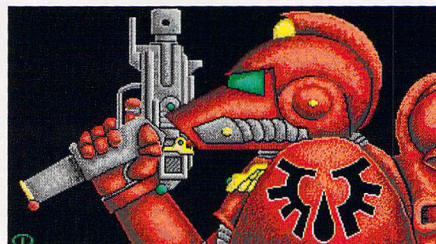
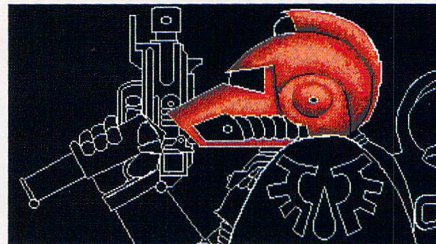
The background was the easy part. First I drew the horizon line, then by using the change function, the airbrush and finally smear mode, I added depth. Then I placed the spaceman onto the background using block mode, and added some stars and craters using zoom. The final stage involved doing the finishing touches, the shadow and footprints. The shadow was done freehand using a thick brush and I did the footprints by hand, using zoom. And finally I wrote my signature in the corner.

■ **Degas Elite £24.95 from Electronic Arts**
☎ 0753 49442



Robin Ball from **Potterne in Wiltshire** also finds space brings out the best in him. In this case it's the Space Marines that force him to put *NeoChrome* pointer to pixel. By his own admission, Robin has only had his ST for two months, and Marine is only the third picture he's ever done on any art package, anywhere! Tell us how you did it, Robin...

First I chose a selection of colours that I thought would be appropriate – plenty of reds and at least three shades of each of the other colours. I then set about drawing the outline. This was mostly done with lines which were rounded off with the pencil. Only the helmet was done with

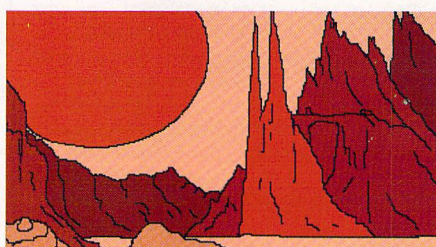
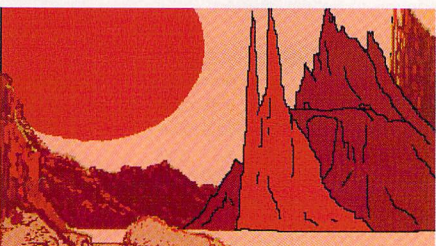
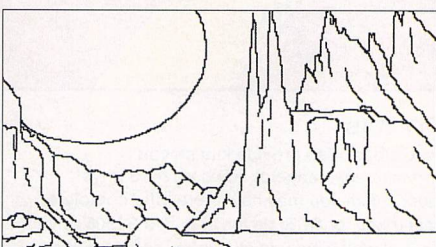


circles, which was necessary because you can't draw arcs or curves with *NeoChrome*.

I then started to fill the red areas with a mid shade. Next, I drew in the dark areas with a small brush and the pencil. Then I used the smallest airbrush to blend the shading in.

After that I airbrushed in the highlights, recoloured the outline and painted in the details. I don't like to leave bits half finished, so I did the detail in each area before moving on to the next section. The last bit I did was the gun, then I added my signature and it was finished.

■ **NeoChrome, a Public Domain program, is part of the ST FORMAT Graphics Collection – see Special Offers, page 148**



Mick Yates from **Adlington in Lancashire** stays stellar with his *Planetscape*, created using *Degas Elite*. Hit us with those secrets, Mick...

I usually work with black on white, roughly sketching all the elements of a picture, in free-hand to begin with. Then I use the line and circle options to get horizontal and vertical areas right. Next, I remove as many construction lines as possible and add lines where I think shading should be. Eventually an outline is produced and at this stage I check for bad perspective.

Now I add colour in blocks using the fill tool. I work from dark to light, with the cooler, darker colours in the background and warmer colours in the foreground. This helps add depth.

The next stage is to put detail into the background by removing the black lines and adding

colour. This gives the impression of folds in the mountain range. At this point I decide where the light source is: this makes shading much easier. Working on various rock formations in the foreground, I use various sizes of airbrush to add shading and give the rock texture. I also use a lot of small lines to shape the stone.

Now for the central area of the picture. Working from dark to light again and overlapping very small areas, I build up the shape of the stones. It's a slow process, often working down to single pixel point size. The moon is shaped using the airbrush option, and like the towers and foreground given highlights to bring the picture to life. A very light pink on the sky near the horizon adds a glow. The ground is textured using the airbrush again and the whole picture is neatened using the magnify option. **stf**

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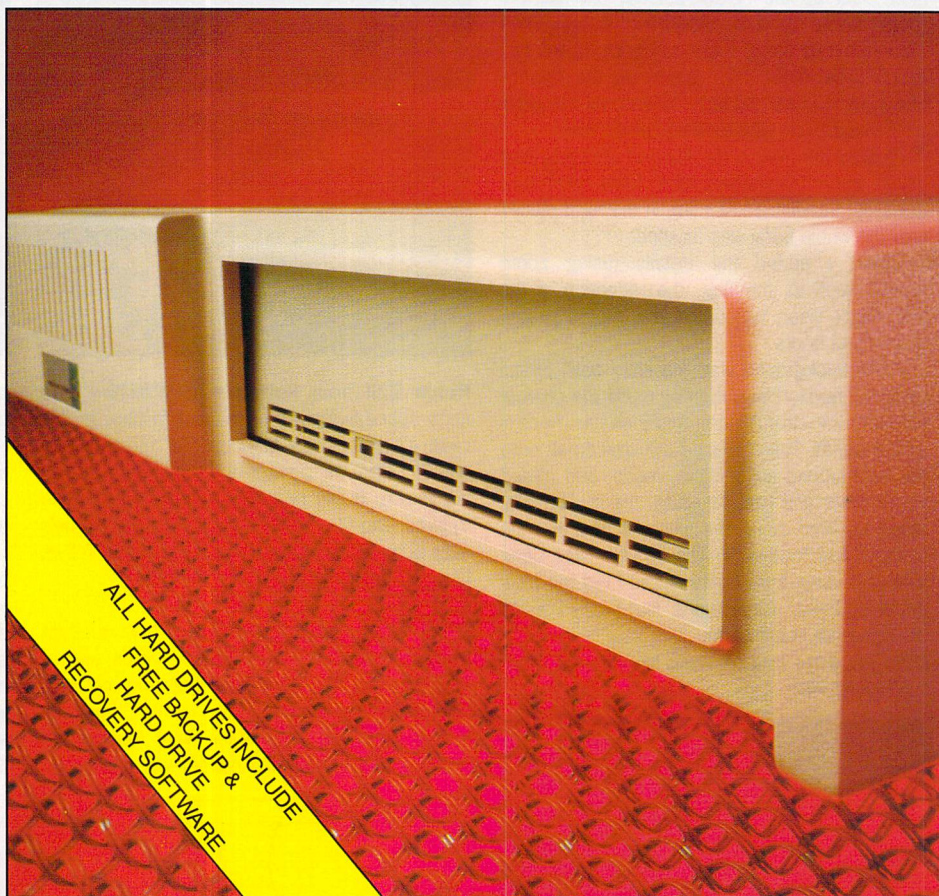
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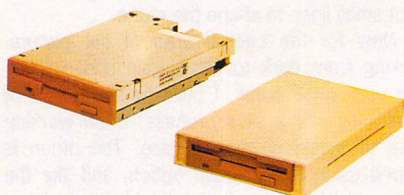
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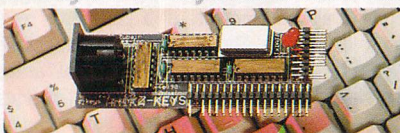


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What exactly is an AUTO folder? It's definitely much more than just the first entry in your file directory. You can use it to load your favourite word processor the moment you switch on your machine. You can customise the Desktop so it performs the way you want it to. You can even fix any bugs in your ST and add whole new routines as well.

An AUTO folder acts like any other folder – you can double-click on it to open the folder up, copy files in and out of it or execute programs. What's special about it is this: when you boot-up with a disk containing an AUTO folder, any programs within it are automatically executed in the order in which they were copied into the folder.

You can make any non-GEM program (one with a filename ending with the extension .TOS) run automatically, simply by copying it into an AUTO folder. However, most programs use GEM and you cannot copy these into an AUTO folder in this way. If you're not quite sure – a GEM program uses drop-down menus or windows. If you have TOS 1.4 or higher, Atari have resolved the problem, but if not – don't panic. Just copy a PD utility called STARTGEM into the AUTO folder and you can set up your ST to load any program when you switch on. STARTGEM waits for GEM to kick in and then automatically loads and executes your program.

There are many such utilities available in the Public Domain, and they enable you to do much more than just load your favourite program. These fall into several categories:

- Those that fix a "bug" in the ST
- Add new features to the ST
- Enhance the ST's performance
- Customise the ST or the Desktop and make it more interesting

Here we examine 20 programs across these different areas and show you how you can make your ST do all the hard work.

take the weight off your shoulders



With an AUTO folder, you can speed up your mouse, display the time or create an extra disk drive from thin air – automatically!

Peter Crush explains how to set up your own and what to put in it

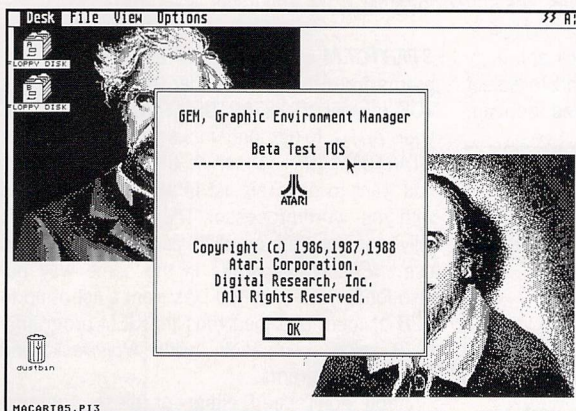
BUG FIXERS BUG FIXERS BUG FIXERS BUG FIXERS BUG FIXERS

A "bug" is a fault in a machine's Operating System that becomes evident only after the machine is in use. There's a number of versions of TOS, the ST's Operating System, and each one tries to correct the bugs of the previous version but often introduces new ones in the process. By using software "patches" it is possible to load code from disk which corrects

these faults. These corrective measures reside in RAM, so they are lost when you switch the machine off and need to be loaded each time you boot up. The AUTO folder is the easiest way to do this. Here's some of the best fixers.

FMC stands for Force Media Change. Some floppy drives do not always recognise when you change disks and you can then lose data or crash. Put a copy of FMC in your AUTO folder and it makes your ST read the disk every time it accesses it. If you do notice odd effects from time to time when you're working from disk, FMC can probably cure them – and without taking up precious memory either.

FOLDERXXX is indispensable if you use folders regularly. A bug in the ST creates a risk of losing data if you open more than 40 folders in one session. You should replace the XXX with your chosen limit for the number of folders you need to open. To re-name any file or program ➤



■ Load in this beta test version of TOS 1.4 from disk and you have a more up-to-date Operating System without having to buy the new ROMs. Almost as good as the real thing. Try it before you lash out on the chips!

HOW TO MAKE AN AUTO FOLDER

Making your own AUTO folder is the easiest thing in the world (well, possibly breathing is easier...) – just follow these simple steps:

1. Take your Boot disk and put it into your ST's drive A. (If you don't have a Boot disk, use a new blank disk.) First click on the Drive A icon, then format the disk by going to the File menu at the top of the screen and clicking on the "Format" option.

2. Double-click on the Drive A icon to open a window for the Boot disk. Using the File menu, click on the "New Folder" option. A dialogue box appears on the screen. Type in "AUTO" for the name of the folder to be created and press <Return>.

3. You have now created a folder called AUTO and written it onto your Boot disk. It appears as a little folder icon in the window on the screen. There is nothing inside it yet, but if you copy certain programs into it they run automatically when you re-boot your ST.

use the "Show Info" option in the File menu. Each extra folder consumes 132 bytes of memory. However, if you're lucky enough to have TOS 1.4 this bug-fix is not necessary.

TURBOCTS is a specialised program especially for those keen on Communications.

When you connect with another device via the Modem or Serial port, a bug in the Operating System causes faulty RS-232 hardware handshaking, which can be a problem when you go "on-line." Sounds complicated? Don't worry – the documentation with this program explains everything and helps resolve the problem.

● If you're troubled by the bugs in your early version of TOS, you can get TOS 1.4 on disk and load it into RAM in the PD beta test version now available. It does take up nearly 200K, but it's free and you don't have to dismantle your ST to use it. If you really like its extra features, you can always get a real upgrade done later.

ES EXTRA FEATURES EXTRA FEATURES EXTRA FEATURES

The ST's Desktop is quite user-friendly, but you can always improve it. The following Auto programs give you loads of new features. Simply pop a copy of them into your AUTO folder.

FSELECT replaces the GEM file selector – the list that comes up in a box on-screen when you want to load or save data from within a software program. You can change between drives simply by clicking on the appropriate buttons,

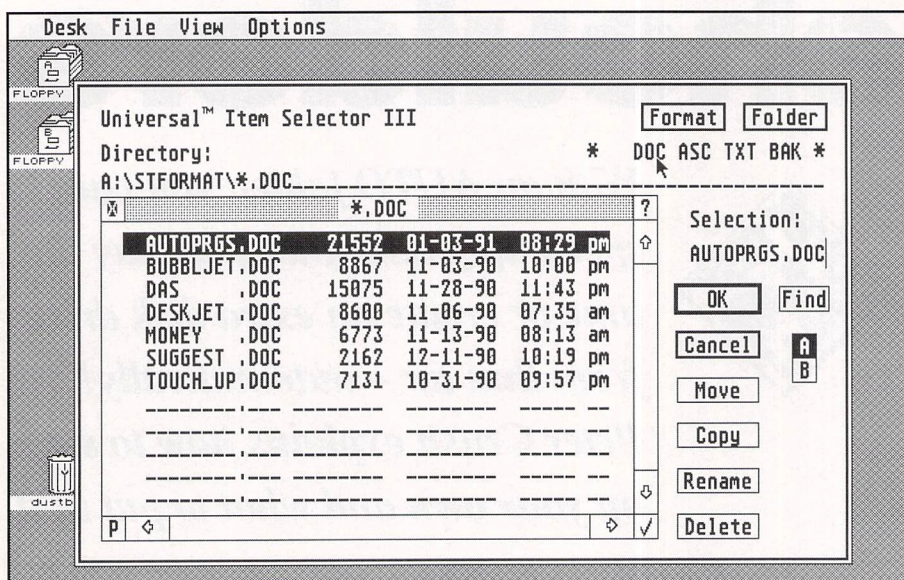
and the contents of the newly selected drive are then displayed. You can also create a new folder without having to exit to the Desktop. If you had the good sense and taste to buy *ST FORMAT 17* you already have **FSELECT** free on the Cover Disk. If not, see page 136 to order it.

There's a number of similar replacement file selectors in the Public Domain, such as **ST-SELECT**. The ST Club's excellent **UNIVERSAL ITEM SELECTOR 3** is the cream of the crop.

MONO_V5 makes your TV or colour monitor emulate an Atari mono monitor, so you can run mono-only programs – like many of the more serious types of application – on your usual colour screen. This means you can save yourself over £100 by not buying another monitor. If you have only a mono monitor but no colour monitor, **BIGCOLOR** emulates a colour display on your mono screen. It works for most programs but not many games, and you only get various shades of grey rather than real colour.

RAMDISKS are a sort of imaginary drive that you create in RAM. You can write to and read from them, just like a real drive, and you can open up a window in the usual way. They can be a cheap way to get a useful extra drive. Don't forget to copy any data saved into a **RAMDISK** onto a real disk before you turn off the ST though, or you lose all the information! There are several excellent PD **RAMDISKS** to choose from. Have a look at **MAXIDISK**, which compresses data as it stores it, or **L-RAM**, which is also re-set proof and once configured installs itself with no further user-input.

TIMEDRV3 displays the time in figures in the top right corner of the screen. When you access drives to copy or transfer data, the time is replaced by a letter showing which drive is running, with an arrow pointing towards the letter if the disk is being written to or one pointing away if it's being read from. This comes in very handy, and **TIMEDRV3** takes up only a little memory in your AUTO folder.



■ **Universal Item Selector** is the best replacement file selector around, and you can call it up anytime from a special Desk Accessory. It's not PD, but it's worth the extra dosh

CE ENHANCERS PERFORMANCE ENHANCERS PERFORMANCE

There are ways to make your ST go further, faster and better than are completely legal and above-board! Just add a few of these AUTO programs to your AUTO folder and astound your pals with your ST's amazing new powers!

MACCEL2 is one of dozens of mouse accelerators available in the PD. This particular one also includes a built-in screen saver: after a few minutes of inactivity it alters the display to prevent "burn-in" damage to your monitor screen. Many accelerators and screen savers are produced as Desk Accessories. **MACCEL2** combines the two facilities and saves you some Accessory slots too by running from the AUTO folder.

PINHEAD 1.4 (the latest version) speeds up the loading of the AUTO folder's contents. If you have a number of programs to auto-run, it can normally take quite a while. You can shorten the wait by putting **PINHEAD** first in your AUTO folder. **PINHEAD** stops the ST from clearing memory before it runs each loaded program. It even enhances TOS 1.4's own fastload feature.

SELECTOR enables you to pick which Desk Accessories are loaded at boot-up. You can have a swag of DAs on your Boot disk and select the particular ones you want each time. (For all you need to know about DAs see the special feature in *ST FORMAT 19*.) **SELECTOR** is ideal if you just need something quick and easy to use immediately. If you don't need to select different Accessories each time you boot-up,



■ **You could fill the entire screen with Desk Accessories, but you can load only six at a time. Select the ones you require and they are re-named with the .ACC file extension, enabling them to be loaded**

consider using **ACCESSORY** – put your six DAs into a folder called **ACCS** and this program in the AUTO folder loads them up from there. This tidies up your Boot disk and keeps all the .ACCs together in the one folder.

STARTGEM enables you to auto-run GEM programs from the AUTO folder, regardless of the TOS of your ST. **STARTGEM.PRG** is copied into your AUTO folder and looks into a file called **STARTGEM.INF** – a list of the GEM programs you want to run. This list is a text file produced with your word processor. The whole program is fully documented on disk and very simple to use. **HEADSTART** works in the same way but also loads your selected DAs from a list of up to 128 of them and then runs the GEM programs. It is also compatible with **MultiDesk** and **NeoDesk** programs.

You don't need either of these two programs if you have an STE or an ST with TOS 1.4. If you are not sure which TOS you have, run a program called **TOSTELLER** (which you can also find on *ST FORMAT* Cover Disk 14).

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➤ **Programmers do have** a sense of humour, and to prove it there are several "fun" items you can put in your AUTO folder to make life a little more interesting for your ST and for yourself.

CRASHER replaces those horrible bombs that appear on-screen when your ST crashes with Leonards! Now if only somebody could come up with something to stop the machine crashing in the first place...

DEG_DESK replaces that boring standard Desktop with a *Degas* picture of your choice. All the icons appear and are moveable as normal but you can only use a picture in a *Degas* P13

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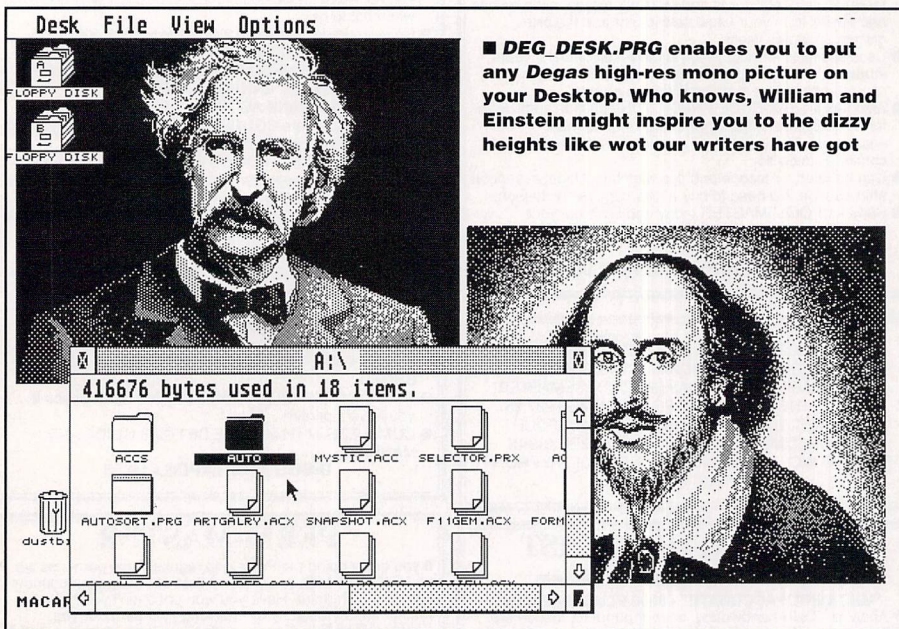
You can stop drooling at the thought of filling your own AUTO folder and start doing it right now! On this month's Cover Disk (see page 43) we've included ten of the AUTO programs listed here. Try them out! What's more, there are plenty of AUTO programs on earlier Cover Disks, like **HRAMDISK** on Cover Disk 13 and **STARTUP** and **TOSTELLER** on Cover Disk 14. For Back Issues, see page 136



(high resolution) format. This PD utility comes with various program versions, all of which work only on mono monitors.

FUJIDISK makes the Atari logo in the Desktop menu bar revolve continuously.

HAL9000 makes your ST talk. On boot-up you get the famous tones of HAL, the computer from the film 2001. Two other programs, **SYS-BEEP** and **STARTSAM**, do the same. Write to the author of these with a donation and he promises to send you alternative samples to use. **stf**



■ **DEG_DESK.PR** enables you to put any *Degas* high-res mono picture on your Desktop. Who knows, William and Einstein might inspire you to the dizzy heights like wot our writers have got

Crasher Program

This is a simulation of an illegal exception, showing four leonards.

Press any key to continue...



■ This Leonard Crasher bloke has a big head and it seems to be full of binary code – perhaps he caught a nasty virus from using somebody else's contaminated disks

WHERE TO GET IT

All the AUTO programs mentioned in this article were supplied by The South West Software Library and The ST Club. Most PD libraries stock these programs – for the PD library nearest you, look through *FORMAT*'s definitive directory on page 100 this issue.

SOME CAPTIVATING AUTO SUGGESTIONS FOR YOUR ST

Some of the programs in the AUTO folder are dedicated to setting up or working on the AUTO folder itself. The first such program mentioned below is an exception to the others in that you should not place it in the AUTO folder, but in the root directory of your Boot disk for convenience. The important thing is to not place it in any other folder.

AUTOSORT enables you to rearrange the order of the programs in the AUTO folder. This is necessary because programs are auto-run in the order in which they were copied into the AUTO folder, and some programs are fussy about where they are placed in this sequence.

Before **AUTOSORT**, if you found that certain programs clashed or didn't boot properly, you had to delete all the contents of the AUTO folder and try copying in the various programs in a different order. This was very tedious, especially if you only had one disk drive.

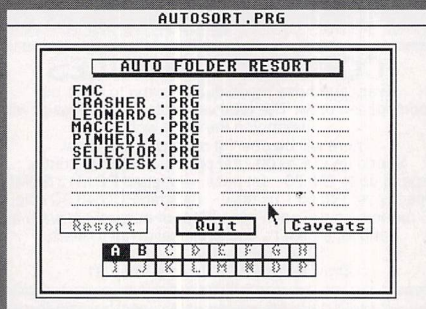
With **AUTOSORT** you are presented with a list of the programs in your AUTO folder and by using the mouse you can drag their names into the new order required and re-sort them.

SUPERBOOT 6 is the latest version of an amazing program which you must place into your AUTO folder if you want total control of functions – you can display a welcome screen,

restrict access to the system via a password, and autoboot any GEM program, among many other features.

This is a heavyweight program and if you are interested you should get hold of this PD disk. An excellent manual is included on disk which you can print out for reference, and there's plenty of other useful info. The program runs on any version of TOS, including 1.4.

DESK MANAGER is another all-embracing program. You can control the same functions offered by **SUPERBOOT 6**. The latest version is



■ Sorting out your AUTO folder is easy with **AUTOSORT**. Just drag the programs into the required order with the mouse

3.3 and is listed in the PD Catalogues as **DESKMG33**. You can select up to 128 each from Desk Accessories, AUTO programs, **DESKTOP.INF** files and **ASSGN.SYS** GDOS files upon booting up. With a single mouse-click, you can select a preset configuration that lists the exact combination of all the above files.

This enables you to pre-define a number of alternative set-ups for specific purposes, then quickly and easily select the one you want – a very powerful tool indeed! Like **SUPERBOOT 6**, it is so packed with great features that you are well advised to read the file on disk.

STARTUP is a simple system to set up but it performs a remarkably useful function – simply put, it tells the ST what to do at boot-up time. You place **STARTUP.PR** in the AUTO folder, and a file **STARTUP.INF** is either in this folder or on the Boot disk. The **STARTUP.INF** file is a list of AUTO programs which you write using a word processor and save as ASCII text. **STARTUP.PR** then loads and runs these programs in the order they appear on the list, irrespective of where they are on the disk. In addition, **STARTUP** makes it possible to issue various instructions to the ST, copying files to and from any folder, or to a RAM disk, for example. You can then set up the computer system to your requirements automatically.



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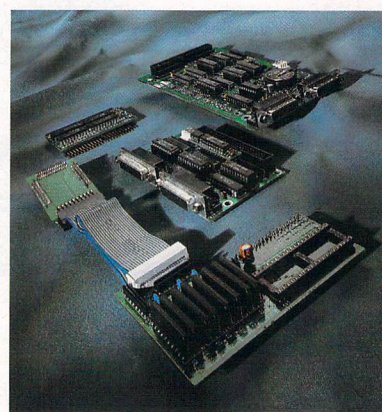
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a game is born 2

*How does an original ST game get created? Paul Carruthers, winner of two **FORMAT** Golds, is hard at work on **Stormball** and for the second time opens up his diary exclusively for **ST FORMAT***

Paul Carruthers is the programmer behind two **FORMAT** Gold winning games, the classic *Archipelagos* and the thrilling *Resolution 101*. He's now hard at work on the follow-up, *Stormball*. Last month **ST FORMAT** reported on the first steps, and in this second exclusive extract from his diary Paul reveals some more of the inside secrets behind the making of a game.

Friday 20 July Dear diary... No, stop it – this is serious! The position so far is as follows: *Stormball* is in its early days of life. Millennium have okayed the specification, or at least said, "Start writing it and we'll check everything looks all right as you go along." This is normal: there's no way you can lay down a rigorous specification at the start of a project and stick to it.

I've extracted from previous games the routines to do the following:

1. Plot a squared chessboard surface using 3D polygons which forms the playing pitch.
2. Draw a contracted version of a big sprite in real time, so the players on-screen appear smaller as they move away from the viewer.
3. Read the keyboard/joystick/mouse, load and save to disk, display text and numbers, handle graphics, expand/contract/ move/blank and so on – all of which are standard routines.

These routines are enough to move a player around the pitch and turn him. The "player" in

this case happens to be an astronaut sprite I drew years ago. Eventually an artist will be commissioned to do a complete set of sprites showing the player running, turning and shooting, but for now all I need is a stand-in of the correct size. Perhaps I should let him plant the Stars and Stripes and then jump in a moon buggy and drive off... Stop, stop! This is getting into the realms of fantasy.

I've written quite a lot of new code to handle the movement of the puck around the pitch, checking for it hitting the edge and having to bounce back into play, and also to check

"The code that makes the opponent move to the puck and return it is actually fairly simple, but the result is amazingly lifelike"

whether the puck is near enough to a player to be taken into his possession, and to start it moving again once he hits it.

I've also had to bring the opponent player to life. Eventually he'll need to be quite advanced in his thinking in order to compete at various levels, but for now I only need something to make him move to the puck and return it to me. This is actually fairly simple: I simply look at the angle he is currently pointing in, then change that angle according to which side the ball is on. If he's within a certain angle of the ball then he takes a step forward. This algorithm isn't perfect by any stretch of the

imagination, but for its simplicity it creates an amazingly lifelike movement.

To return the ball, he just turns round slowly until he is pointing roughly towards me and then hits it. Again the code for this is very trivial, but what results is an entirely credible opponent. Even though I know the instructions that drive him I still imagine him as a living intelligence who watches the ball and moves accordingly. The aliens in *Resolution 101* are quite advanced in their movement but even they never looked like they were thinking.

The basic elements of the game as set out in the specification have been included and seem to work as expected. The problem is that the control is not fluid enough to enable you to move around or aim and fire the puck as freely as you need to. One reason for this is the limitations of joystick control; another is that the animation is too slow.

To create the picture on-screen, the ST has to draw a complete 3D polygon surface and then do some sprite contraction. Each of these tasks is quite daunting on its own, but together they comprise a huge workload for the machine. The only way I can speed it up is to fundamentally rewrite either or both of these routines. As it happens, I found that the 3D polygon code



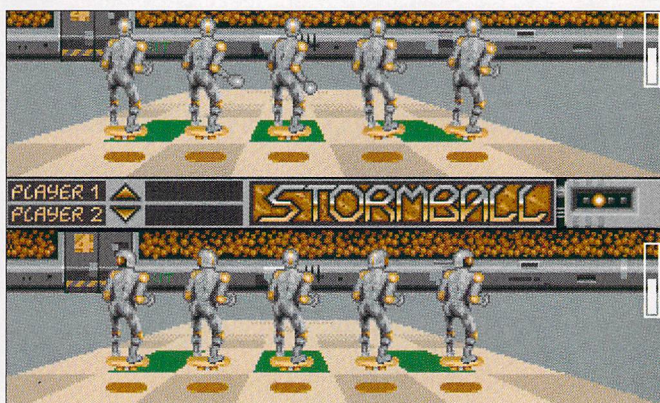
■ Paul Carruthers, who's already earned two **FORMAT** Golds



■ Paul used this old astronaut sprite from *Quadralien* to get the basic game elements in *Stormball* working



■ In the early stages of the game, Paul imported a digitised image of himself to get a more realistic sprite to play with



■ This is an early mockup screen constructed by Millennium to show what the game might look like when it's finally released

could be tackled a completely new way and the resulting routine runs about 50% faster than the old, so I'm very pleased.

Wednesday 22 August I need to work on Computerman: his stupidity is beginning to annoy me. All he does is return the puck straight to me like an obedient puppy. He should be more devious and unpredictable, striding about, thinking about his shots and then making delicate hits into awkward corners. His ultimate target must be to beat his creator.

Such subtlety of play, however, isn't easy to program. When I play the game, I might try to bounce the ball in and out of his half without him being able to touch it by whacking it straight at the opposite wall. I might try to keep it in the other half as long as possible by hitting a shallow ball against the side wall or lure the poor unfortunate into a defensive position and then quickly run to a spot where I have a clear shot at a high scoring area. Or I might just hit the thing and hope for the best.

Curiously this last strategy often proves successful, but for Computerman none of these methods is suitable. He's far too logical to handle anything so vague. With such a computerish mind he must approach the problem from the other end. If he can imagine hitting the puck at a certain angle and then follow its path across the pitch, counting up the scores as it goes, then he has an numerical indication of the success of that strategy. By repeating this process for other angles, he can select the highest scoring



■ Another of Millennium's mockup screens – compare this with the real thing, below

path. The larger the number of potential angles he considers, the greater his chance of finding the best shot. On the other hand, by limiting this number I could curb his intelligence.

This method only determines a likely angle at which to hit the puck; it doesn't help him work out where or when to do it. It also involves a lot of computing to follow a number of possible trajectories to their conclusion, which may leave him looking around for quite a few seconds. On the plus side, the routines that move the puck along its trajectory in the game are already written and working, and I can hook into these to project the potential trajectories so I'll try it.

As for him working out where to move to make the shot, I think I'll forget about it for the moment and have him hit the shot from wherever he happens to catch up with the puck. I suspect the solution to this problem should be something like choosing certain points on the

pitch that are generally good to hit the puck from and others that are not, and having Computerman then compare his position against all of these. If he finds himself badly placed, he might then move towards one of the "good" positions. I'm looking forward to clashing with my new improved friend to see how good his technique is. I'm also very aware of the holes in his education and the work I still have to do.

Thursday 20 September A few problems with Millennium: some of them like how the game is going, but some of them don't. The upshot is that I've been trying to find ways of making the gameplay more gripping, more addictive. One possibility is to try for a sort of 3D *Arkanoid*, so the player always hits the puck when he makes contact, at whatever angle he's pointing. This way the puck stays on the move and the emphasis of play shifts away from thought and accuracy, towards speed and luck.

Another option might be to introduce some off-the-ball activity such as picking up weapons and shooting your opponent... Mm, perhaps not. The final game shouldn't be an uncomfortable mix of arcade, strategy and sport which nobody can quite identify with. It must be playable, but I don't want it to stray far from my original idea.

I've rewritten the joystick control so the Fire button is now used as the switch between "turning and moving forward/back" and "moving forward/back/left/right". You now hit the puck by a quick tap on the Fire button. This has improved the ease of movement and playability a great

CLASSIC GRAPHICS, MEET STORMBALL



■ This sequence consists of actual screenshots taken from *Stormball* as it is now, with sprites designed by one of



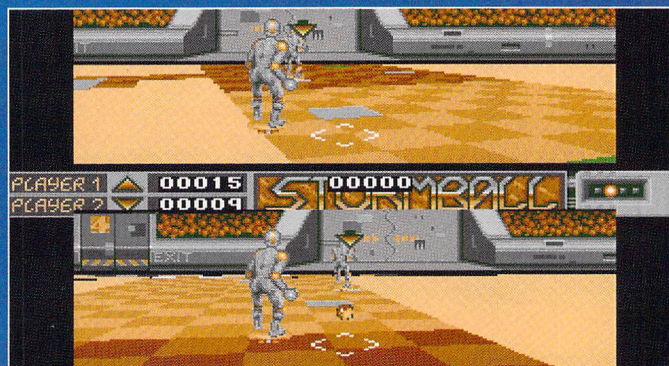
Millennium's in-house graphic artists to show how it's shaping up. There's still only two frames, limited animation,



and some details remain to be attended to – for example, appropriate costumes for the players – but when the game is



finally released its basic look and feel shouldn't be radically different – these pictures were actually taken from an ST



■ Here you can begin to picture how the game should look when the two-player mode is introduced. With an inter-machine link, it should be a corker



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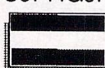
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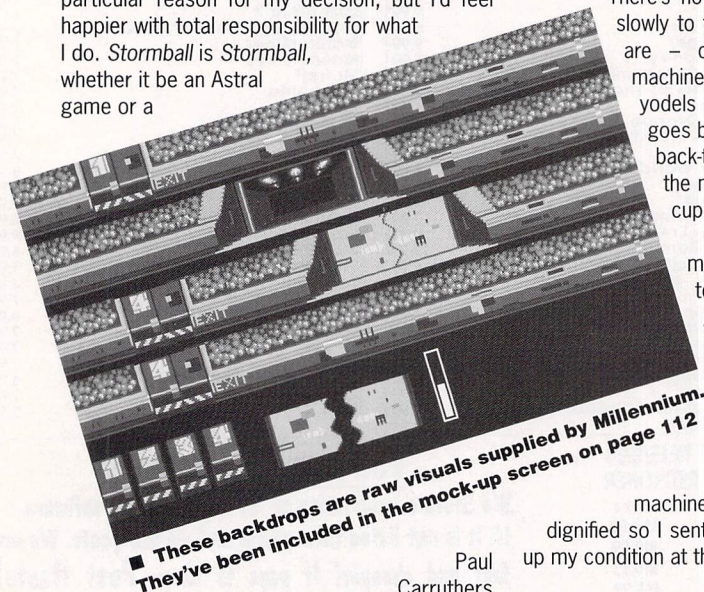
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deal. You reach the puck sooner and the game moves faster, though aiming and shooting are still awkward. I've implemented a time limit for collecting, aiming and shooting the puck: when the puck enters your half, you get about six seconds to get to it and hit it back. One idea was to start the timer only once the puck gets into possession: this should keep up the excitement but relieve the pressure the timer causes.

Sunday 21 October This bloody game has lost direction. Something doesn't feel right. External factors have also been affecting things: I've decided to quit Astral [the three man team Paul is part of] after this game and go it alone. There's been no arguments or any particular reason for my decision, but I'd feel happier with total responsibility for what I do. Stormball is Stormball, whether it be an Astral game or a



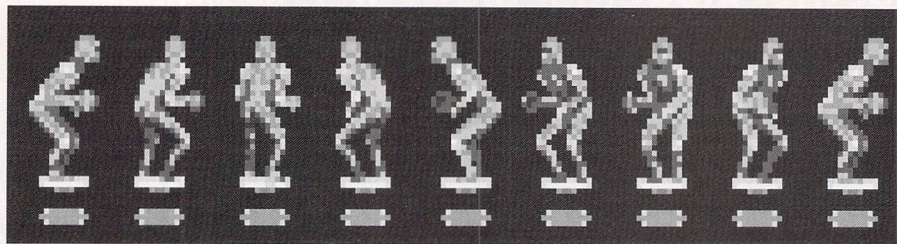
■ These backdrops are raw visuals supplied by Millennium. They've been included in the mock-up screen on page 112

Paul Carruthers game. Either way my mood can only have a very adverse effect on it. Consequently I've been concentrating more on the code aspects.

The "Astral Engine" – the code that plots the 3D-polygon floor – needed a few tweaks. It was fine for when the viewpoint is just above the surface, but I wanted to float right over the pitch and get a bird's eye view of what's happening. With the engine as it was, inaccuracies were exaggerated and the picture became a jumbled mass of colour like those naff woolly jumpers computer programmers wear. The necessary changes turned out to be extremely easy to implement and actually worked straightaway – which is very unusual, to say the least.

Other programming improvements are a scrolling crowd now in the background and a big rewrite of the code which handles the game itself to make things more efficient. I've also been bolstering up the routines that handle the inter-machine link.

On the technical side of programming I've always been something of a duffer and have relied on other people for that sort of routine. This time, unfortunately, nobody seems to have had any experience of serial interfacing and I've had to do it all myself. I tried my hand before starting Stormball to make sure it's possible to offer a two-machine option and I managed to



■ More raw graphics – here, the sequence of sprites that enables your opponent to perform a neat little pirouette as he moves to intercept the puck and return it to you

get some positive results, but now the time has come to do it.

Writing code that interferes with a machine's hardware (titter ye not) is difficult and annoying. There's no way of stepping through it slowly to find out where the problems are – one wrong poke and the machine howls like a dog, grunts, yodels and whistles. The screen goes blue, yellow, upside-down and back-to-front. Switch off. Question the machine's parentage. Make a cup of tea. Try again.

I finally managed to send a message from one machine to another and back. In the grand tradition of Edison's first recording of "Mary had a little lamb" on wax cylinder and Neil Armstrong's first words from the moon, the message I shuffled between machines needed to be similarly dignified so I sent "Hello farty." This summed up my condition at the time.

Thursday 22 November I'm now happy with the game. It plays very well and feels right. Its thrust is more like the original idea: there's the action and excitement of a real-time game, but at the same time I've emphasised the importance of aiming a shot accurately to earn the maximum possible score. I've also written a robust pitch designer, which has helped a great deal to tie up all the loose ends in the gameplay.

I've had a meeting with Millennium this week to assess progress and try to plan the way forward. Now that Jason Spiller has replaced Tony [Beckwiss, now with Mirrorsoft] as Project Manager I wanted to have a good chat with him about the overall thrust of the game, its image and so on. Fortunately we've been able to agree on the correct approach, rejecting notions of a science fiction future sport with yawny metallic balls and reptile spectators. Apart from being terribly naff, a reptile head is a cop out because it needs hardly any facial expression.

The appointment of an artist is unfortunately well overdue, but we've managed to go through a number of possibilities for both the players and also the interleaving sequences that should help set the scene and give the game atmosphere.

We talked about all the aspects of the game apart from the actual "on-the-pitch" action, and I think we're largely in agreement

about the right approach. Of course this will develop once an artist is on the case. Millennium understand that the gameplay is important to me and that their role is to have opinions and make comments but otherwise leave it to me.

One big problem that remains is that you still can't see much of the puck if it is obscured by your player. One idea I had this morning is to move the player to the left and have him reaching to the centre of the screen with his stick. At centre-screen is a subtle indicator (like a sight) that this is the area of action, so the player

"Jason wants to call it 'Puck Off' – can you believe it?"

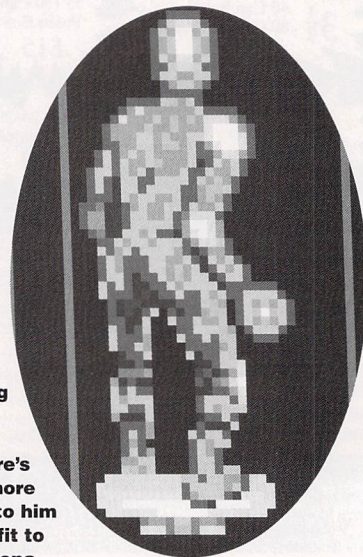
traps the puck here and then hits it back. This seems more sensible than drawing the puck over the man, which looks odd. I think I'll try it.

In my original implementation a player could move with the puck once it was in his possession. One of Tony's first comments was that the player should be stopped when he took possession and should have to hit the puck almost immediately. Now Millennium have decided the player should move with the puck after all.

I've also had an idea for the name: Strong-arm. Jason wants to call it "Puck Off," but this would immediately label the game as a jokey, downmarket product. Sometimes an apt name is obvious from the start and creates no problem, but more often it causes a headache. Puck Off – can you believe it? **stf**

■ Next month in *A Game is Born* we speak to Millennium themselves and look in detail at the commercial aspects of the game – artwork, packaging, royalties and so on. Don't miss it!

■ You – or rather, your alter ego in the game world, as visualised by Millennium's graphic artist. This is going to become one of your main playing sprites in Stormball – though there's still some more work to do to him before he's fit to enter the arena



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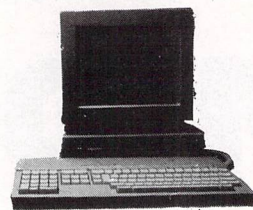
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MIDI helpfile

After last issue's introduction to the basics of MIDI, Vic Lennard tackles the tough stuff and answers all your thorny MIDI questions

■ Quality piano wanted

As a pianist, I want a quality piano as the master keyboard in my studio and am considering either the Technics PX-66 or the Roland HP2700. My system is based on a sequencer on the Atari ST – probably C-Lab's Notator. Is there anything on the MIDI side to sway me one way or the other?

It would be nice to think that the decision is purely down to the sound quality, but that would be naive. There's nothing worse than a MIDI problem to remove much of the creative aspect of composing music.

Such a problem, unfortunately, exists with the Technics PX-66 – that of lack of Local Control Off. This MIDI function divorces the keyboard from the sound-generating circuitry and is most important when using a keyboard as the master for the system. It effectively gives you a separate keyboard and sound module – there is no longer local control of the internal sounds.

Consider what would happen otherwise. Every time you press the keys, internal sounds play. Let's say you record the piano part first on the sequencer and then play it back with the intention of recording the next part. Hit the keys and you not only get the first part playing back but also the current part you are playing. To prevent this, you turn down the volume control – and now you can't even hear the first part!

The only way around this is to keep the volume down and play the piano part last of all, which is hardly in keeping with the creative spirit. You can also end up with a MIDI loop, which means you hear the note as it is being played and again as the MIDI information is transmitted from the sequencer.

The lack of Local Control is a major omission on the Technics piano. The Roland HP series of pianos supports Local Control.

You can usually see whether a MIDI device supports this command by looking at the MIDI Implementation chart at the back of the manual, but be careful – this only shows whether Local Control can be set on that device by the following MIDI commands:

Bn 7A 00 – Local Control Off

Bn 7A 7F – Local Control On

– where "n" is the MIDI channel. What it won't show is whether Local Control can be turned on and off via the front panel. It's a lot of use being told that your keyboard recognises Local off when you don't use a computer!

C-Lab's Notator offers an auto-off MIDI channel which gets around the loop problem by preventing the sequencer from re-sending the notes on the MIDI channel that you played in on

GHOSTLY FLASHES

■ I have a fairly substantial MIDI setup which runs through a Yamaha MJC-8 MIDI patchbay. This has eight MIDI Ins and Outs and a "monitor" of eight LED's to show when MIDI information is being received. Whenever the system is on, these lights are continuously flashing even though I'm not playing any notes or pressing any pedals. Why?

When MIDI was initially devised, there was a great deal of concern regarding stuck notes. This led to two methods of prevention. One is ALL NOTES OFF – see last issue's introduction to MIDI. The second is ACTIVE SENSING.

This is a single byte message – FE hex – sent out by a master MIDI device, usually every 300 milliseconds or less. It effectively says "I'm still connected to you" to every MIDI slave whenever no MIDI information is flowing from the master. Consequently, if you should play a note and then disconnect the MIDI Out lead, the notes are shut off 300 milliseconds later. The disconnection could also happen accidentally if you change patch on a MIDI patchbay.

Not all master devices send out Active Sensing, so reception by a slave is not mandatory. However, once the slave device receives one FEH byte you can expect it to continue receiving them. Your MJC-8 is registering the fact that this information is being received.

An interesting aside to this is that some software writers send out an Active Sensing byte or two on stopping the sequencer, with the intention of shutting off a synth which is still sounding!

– but the problem of hearing the piano sound every time you play remains.

■ My disobedient patches

In my current set-up the MIDI gear consists of a Yamaha DX7 Mk 1, a Roland D-110 and an Alesis Midiverb 2. I would like to use the patch change facilities on these with my sequencer but am having problems getting them to do what I want.

You have three very different MIDI devices so let's look at them separately.

The Yamaha DX7 Mk 1 responds to a MIDI program change on the MIDI channel to which the synth is set: program changes 0 to 31 select internal patches 1 to 32. (This happens because MIDI counts from 0.) If you have a cartridge plugged in, then program changes 32 to 63 call up the patches 1 to 32 on this cartridge.

The Roland D-110 is a multi-timbral synth. This means you can treat it as eight synths

(called "parts") in one box with an extra rhythm section. The D-110 has 255 sounds (called "tones") on-board but MIDI can select only up to 128 of these, so Roland have a special system to get around this. A tone and certain programming aspects can be saved as a "timbre," and there are 128 of these. Each part can access one timbre and can also have a specific MIDI channel assigned to it. If you send a program change on that MIDI channel, the timbre for that particular part is changed.

Consequently you can send program changes on different MIDI channels to change just one timbre out of up to eight in use. Take care, though, because the timbres are in two banks, A and B, numbered like this: A11, A12... A18, A21... A28, then through to A88.

The D-110 also has 64 "patches." Each of these is a collection of eight parts. If you send a program change on the MIDI channel one less than the lowest being used by a part, then you change to a new patch. In this way you can set up the D-110 with new parts for each song with one command.

Alesis's Midiverb 2 has two methods for patch changing. Mode 1 enables you to set up a patch change table of 32 patches which is called from MIDI program changes 0 to 31. This enables you to select a particular effect at the same time as choosing a particular timbre or part on your D-110. Mode 2 selects patches 1 to 99 on receipt of MIDI program changes 0 to 98. Each of these modes responds on one MIDI channel which you can set.

It is also possible to patch change your D-110 by pressing the voice select buttons on the DX7. But unfortunately, the Mk 1 transmits only on MIDI channel 1 – which is a little restrictive, to say the least! **stf**

GOT THE MIDI BLUES?

Vic Lennard runs the United Kingdom MIDI Association (UKMA), which publishes *MIDI Monitor*, a monthly newsletter free to members, as indeed is advice on all MIDI matters.

The full service, which includes the newsletter and on-line support and advice, costs £34.50; contact 'em on ☎ 081 368 3667.

If you're not quite so well off but still have problems with MIDI equipment, it is cheaper to write to: MIDI Helpfile, **ST FORMAT**, 30 Monmouth Street, Bath BA1 2BW. Do include all the necessary info including serial numbers and a diagram of your system.

THE 1990 ATARI ST PRODUCT GUIDE

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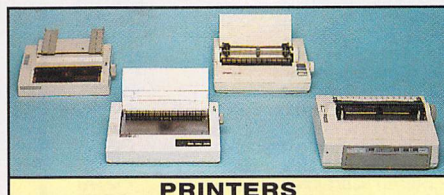
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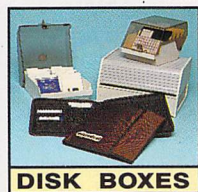
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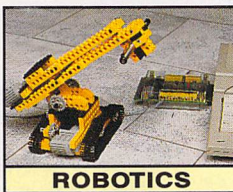
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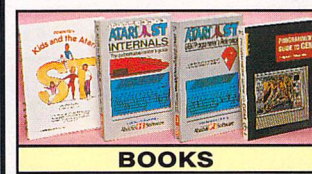
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C-Lab Creator v3.0

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PRICE: £299

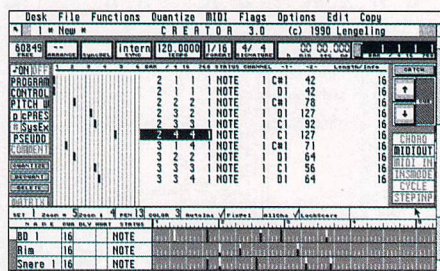
FROM: SOUND TECHNOLOGY

CONTACT: 0462 480000

Walk into any of the top recording studios and next to the mixing desk, the tape units, the synths and the big comfy chairs you'll see an Atari ST. The odds are that the software running on the ST is a C-Lab sequencer. C-Lab's *Creator* is the "budget" version of the acclaimed *Notator* package, so just what makes it so special?

Control of *Creator* is primarily by means of the mouse, although there are keyboard shortcuts to the main functions. All the sophisticated features are accessed from pull-down menus.

Creator stores musical information as a series of events. An event is the smallest unit



■ The Event Editor comprises an Event list, a Matrix editor and the Hyper Edit screen – all are editors in their own right

you can control within the program. This may be a note, or an instruction – adding reverb for example. A track is a series of such events. This may, for example, be one particular instrument's notes in a song. Tracks are grouped together in patterns of up to 99. One pattern can be the introduction, for example, another

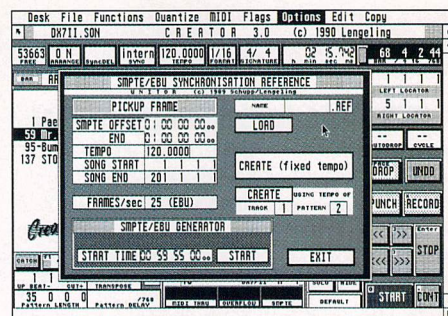
YEAH, BUT WHAT IS A SEQUENCER?

You've got a flashy new synthesizer, you've got an ST and you know that you're able to connect the two together, but you're not sure how. The answer, gentle reader, is a sequencer. This amazing piece of software enables you to record the MIDI – Musical Instrument Digital Interface – information your synth spews out while it works. Once this data is recorded you can monkey around with it and then send it back out to the synth to hear what it sounds like.

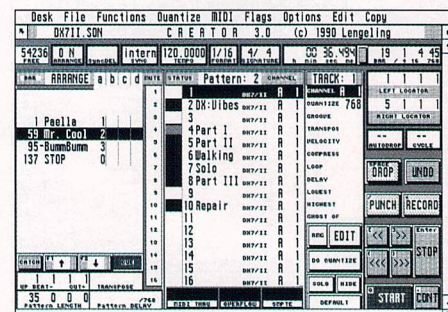
Depending upon how sophisticated your sequencing software is, you can carry out a

plethora of operations on the notes. Thus you can tart up even the dowdiest tune until it sounds positively vibrant (well hey, it works for Rick Astley).

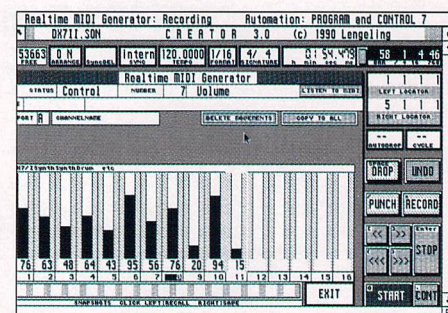
For example, if you play a song out of time, you can quantize it and the sequencer aligns the notes with the beat. Hit a bum note and you can move it to the right place on the staff. Once you're happy with the finished song, you can save it to disk, bung it in the post to a record company and wait for the offers to start rolling in.



■ Send out SMPTE time codes to audio or video tape and you're half way to creating a synchronised video for your song



■ Load in a song and the various tracks, track names and song information are displayed on screen. Now click on "play" and listen to your glorious music



■ The Real-Time MIDI Generator enables you to modify any of the usual 16 MIDI channels, as the music plays. For example, you can fade songs in and out

the main section, or another the bridge. You can shuffle, move, rephrase and generally reshape all these units of sound until you're happy with them.

RECORDING AND PLAYBACK

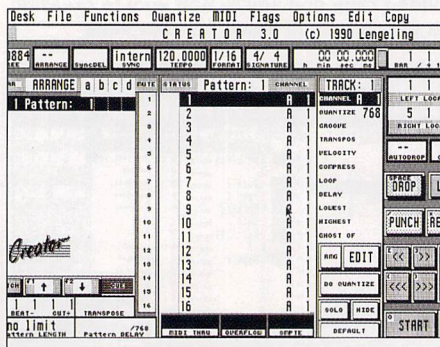
Actually recording musical information from a MIDI device with *Creator* is simplicity itself. The transport functions are arranged just like a tape recorder. So to lay down a track, you simply click on the Record icon, wait for the count-in and then start playing in time with the metronome. When you're finished, you click on Stop, hit Rewind and then listen to what you recorded. You can assign these transport controls to keys on your MIDI device, so for example the top octave on your keyboard can control Record and Playback.

In addition to the standard Record functions you can also merge into an already recorded track, either with or without a count in. You can use a function called Record-Cycle Overdub to lay notes down on top of each other. If you play something without recording it and then wish to

know what you just played, you can access the Record buffer. This stores all notes regardless of whether you're recording or not.

TRACK MODIFICATION

Once a track is in place you can then start modifying the way it sounds. This is carried out from the Track parameter menu bar which is located on the main screen display. Its functions include: Looping after a certain point, Compressing the track, Delaying it, Quantizing it, or producing a Ghost of it. Loop, Delay and Compression are fairly self-explanatory, but the



■ This is the *Creator* screen on load-up. All variables are zeroed and the program is ready for MIDI data entry

Ghost and Quantize functions are more complex and need some explanation.

Quantizing places events so they fall on equal beats – useful for those who can't stay in time. Ghosting, on the other hand, enables you to play data from a source track according to different track playback criteria. You can then produce arpeggios, delays, choruses and octave doubling without affecting the root track.

Creator includes a Track Display function called Hyper Edit which shows notes on a matrix type display. Each event is represented as a bar. From here, you can directly change the volume or place of each of your notes. In addition you can watch the display in real-time as it plays back. Functions such as Quantization can be performed on tracks from this display. What's more you can use this display as a drum editor, by assigning a drum sound to each track.

The Matrix editor works on a similar basis to Hyper Edit. A graphical display of a keyboard at the bottom of the screen shows notes highlighted as each event takes place. You can zoom in or out of each event and perform all the standard functions with the notes displayed.

SMPTE AND SOFTLINK

Using a piece of add-on hardware called Unitor, you can transmit SMPTE (Society of Motion Picture and Television Engineers) time codes to

audio or video tape. These are used to sync sound and vision together on tape. Thus with *Creator* you don't just get one of the best sequencing packages in the business – you also get the chance to produce your very own pop videos too. **stf**

FORMAT RATINGS

C-Lab CREATOR/£299

Sound Technology/0462 480000

Features 93%
Very powerful MIDI recording and editing functions

Speed 92%
Quantization and other sound transformation operations are all extremely fast

Ease of Use 92%
Icons, pull-down menus and keyboard shortcuts make life easy for the aspiring musician

Results 95%
Depends largely on your musical talent. The software can transform a tune out of all recognition

FORMAT VALUE 92%
Pricey, but then this is the professional's choice

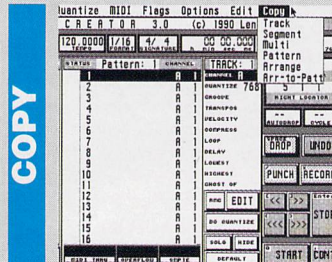
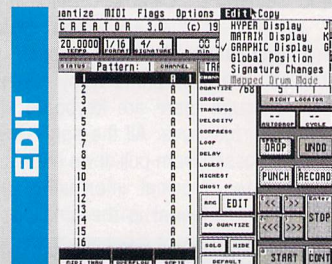
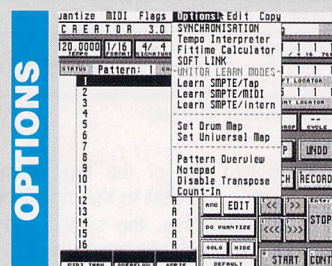
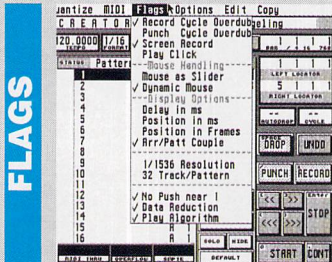
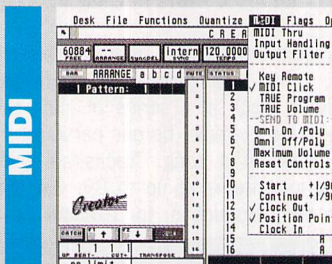
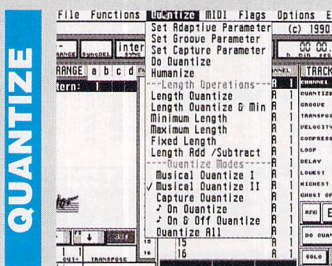
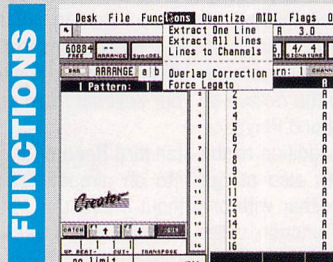
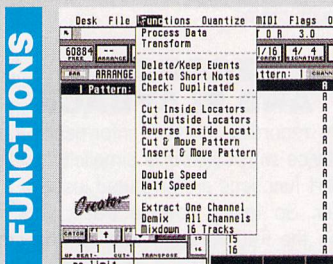
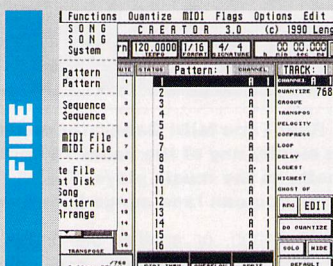
The Competition

Notator at £499 also from Sound Technology, or Steinberg's *Cubase* (£550) and *Pro 24* (£199.99) from Evenlode Soundworks ☎ 0993 89 8484

THOSE MUSICAL MENU BAR FUNCTIONS

All the main functions, plus many extra ones, are available from the menu bar. Thus you can interact with the program in a manner that's familiar to owners of the ST. All the display types, musical functions and event edit effects can be accessed from this section.

Desk File Functions Quantize MIDI Flags Options Edit Copy
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PRODUCT DESCRIPTION PURPOSE

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TO AIM TOWARD NEW HORIZONS FOR MIDI MUSICIANS

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fonts galore

Tim Anderson
explains how
to use *Fontkit*
to liven up *Timeworks*
DTP, *Calamus* and
other GDOS programs



Fontkit Plus 3

MACHINE: ALL STs

PRICE: £19.95

FROM: THE ST CLUB

CONTACT: (0602) 410241

Are you familiar with *Timeworks DTP*, *Hyperpaint*, *Degas Elite*, *EasyDraw*, or even *Superbase Professional*? If so, then you already use GDOS without even knowing it. Many programs use Atari's system for handling multiple fonts – the modern desktop publishing term for what used to be called typefaces. Indeed, it's hard to avoid GDOS if you use the ST seriously, and although it's downright awkward to use, GDOS is capable of producing excellent results. You can vastly improve programs like *Timeworks DTP* if you can do something about the dull fonts which are supplied with it. *Fontkit Plus 3*, a genuine bargain at £19.95, does the job nicely.

Fontkit is a font designer – a specialised drawing program, complete with pens, shapes, block tools, rotate and mirror options, and even Bezier curves. It's an excellent program, though you could still find *Fontkit* a bit daunting. Programmer Jeremy Hughes certainly knows a thing or two about font design and the ST for that matter, but the manual is terribly serious and technical. And on the disks you find ➤

WHAT IS GDOS?

GDOS stands for Graphics Device Operating System. It's an official Atari program which can't be bought on its own – but it comes free with any commercial programs that make use of it, and there's a lot of those.

The number of GDOS fonts you can load at once is limited by available memory. If you don't install a new font, edit *ASSIGN.SYS*, switching off the fonts you don't use by placing a semi-colon at the beginning of the lines containing their filenames.

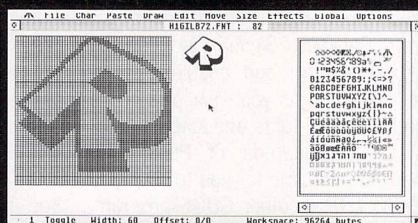
GDOS reads *ASSIGN.SYS* only at boot-up time, so you must re-boot to install any changes you have made. *ASSIGN.SYS* must be in the root directory of the boot disk – that is, not in any folders – to take effect.

There's a handy introduction to GDOS available in the Public Domain – the ST Club (☎ 0602 410241) have it on disk WPR 48.

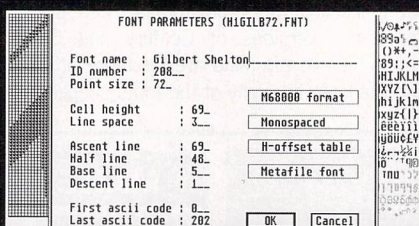
HOW TO GET A FONT INTO TIMEWORKS DTP



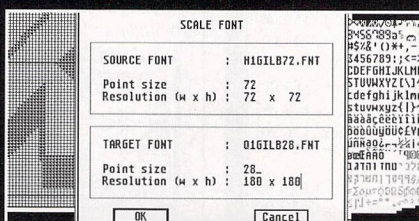
It's all very well having these lovely fonts, but how do you make use of them? Here's how you convert and install a PD Macintosh font, like the one supplied with *Fontkit*, into *Timeworks DTP*.



1 Using the "Import" option, load the font called *GILSH.MAC* into *Fontkit*. It then converts Mac fonts by running a program called *MAC2GEM*. On a 520ST, you may need to run this separately. *GILSH.MAC* – or *GILBERT SHENTON* – is a merry upper case font eminently suitable for light-hearted headings.



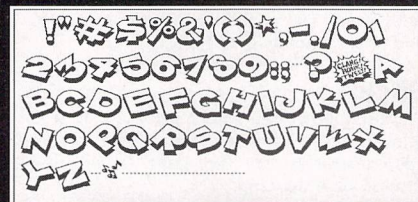
2 Using the "Global" menu, check the details of the font under "Information" and "Parameters" – in particular: Resolution, 72 x 72 dpi; ID Number, 208; Point size, 72pt and Cell height, 69.



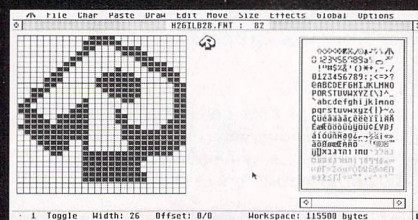
3 This is the difficult part. If you have a 24 pin printer, you need a font at 180 x 180 dpi (that's dots per inch). To get the least distortion when scaling the font, juggle with the point size and resolution so that the new font matches the old more or less dot for dot. A good tip, with 24 pin fonts, is that cell height is equal to 2.5 times point size. (With a 9 pin font, the multiple is 2.0, for a font at 120 x 144 dpi.) The cell height of *GILSH.MAC* is 69, which is very nearly 2.5 x 28. Therefore, it should rescale nicely to a 28 point font at 180 x 180 dpi. Okay – you can relax now.

Assuming that you haven't suffered from an acute overdose of mathematics, use the "Scale Font" option from the "Global" menu and enter the relevant values for the new font. Following *Fontkit* convention, the new font

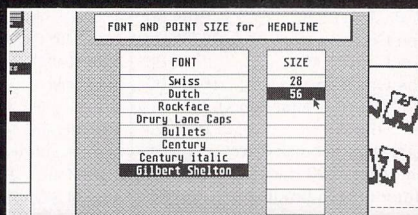
should be named *Q1GILB28.FNT*. Change the point size to 28 and the resolution to 180 x 180 dpi. Click on "OK" – and we're off!



4 Have a look at the scaled font. It looks quite decent – not much touching up is needed. Even the "Clang! Honk! Tweet!" character is quite readable. It's always a good idea to print out the font using "Print Font" from the "Options" menu and see how it looks on paper.



5 GDOS needs a screen font as well as a printer font. Save the printer font to disk and then rescale the font to a 28 point, 80 x 80 dpi size, using the name *H2GILB28.FNT*. The result is adequate – for *Timeworks*, it doesn't matter too much if the screen font doesn't look great; it's the printer font that counts.



6 The new font needs a unique ID number, which for *Timeworks* must be no greater than 126. Load your new fonts, change the ID number using "Parameters," and save them. The fonts supplied with *Timeworks* have ID numbers between 2 and 90, so choose a higher number. Now to get the font into *Timeworks*.

First, copy the new fonts into the *GEMSYS* folder in your *Timeworks* set-up. Then, edit *ASSIGN.SYS* (using "Program" mode in your WP), adding the new font names as the last screen font and the last printer font respectively. With *Timeworks* you must list the fonts in ascending order of ID number. Re-boot the computer; run *FONTWID.APP* to tell *Timeworks* about the new font widths; and hey presto! You have a new font in the *Timeworks* font menu. The same GDOS set-up should work fine with *Easy Draw*, *Hyperpaint*, and others, although some, *Degas Elite* for example, may be more fussy.

JARGONBUSTING

Bitmapped fonts:

GDOS uses this kind of font, where each character is defined as an image, stored pixel by pixel in the font file.

Leading:

Pronounced "ledging." The traditional typesetting term for the distance between lines of type, also measured in Points.

Outlined (vector) fonts:

Outlined or vector fonts are stored as shapes and converted to bitmaps only at print time. The result is smaller font files and total flexibility over typesize.

Pitch:

The number of characters per inch. This is relevant only with monospaced fonts (where each character has the same width). See Proportional Spacing.

Point size:

A unit of size used in typesetting. There are 72 points to an inch. This line is set in 7-point type, the words "Point size" in 9-point.

Proportional Spacing:

The opposite of monospacing. Each character has a different width: for example, an "i" takes less space on the page than a "w."

Resolution:

The number of dots per inch (dpi) used to make up each character. Professional typesetting machines generally run at 1,200 x 1,200 dpi, laser printers at about 300 dpi.

➤ not one but a whole collection of font programs and utilities, along with a bewildering variety of fonts in different formats.

Font design is a lot easier using *Fontkit* than it used to be, but it should not be taken lightly – a typical character in a 12-point font intended for a 24-pin dot matrix printer draws on a grid of between 400 and 600 dots. Multiply that by the 80 or so characters needed for a basic character set, and you can see that a lot of finely detailed work is involved. And quite apart from the sheer magnitude of the task, designing a font is skilled work. A few small errors of spacing or angle, and your lovingly crafted font looks a right mess.

Fortunately, you can also use *Fontkit* for converting and touching up fonts, and this is what most people use it for. It accepts fonts from *Calamus*, *Signum*, Macintosh or old-style *Degas* format, and enables you to edit and rescale them as you wish. You can also rescale and edit GEM fonts (the kind used by GDOS). As a result, hundreds of Public Domain fonts become available for you to use with your *Timeworks DTP* or other GDOS programs. (See the box on page 123 for how to install them.)

Fontkit is also a dab hand with printer fonts. You can download fonts into a printer's RAM so that ordinary word processors can use them without fussing about with GDOS. It's a lot faster to print that way, but doesn't have the flexibility over size and layout which GDOS printing offers.

Jeremy Hughes and the ST Club supply some excellent fonts with *Fontkit*. There are very impressive versions of Century and Century Italic which to my mind are far more attractive and readable than any of the fonts supplied with

Timeworks DTP. For a professional appearance, a genuine italic font is essential – sloped fonts aren't at all attractive. There are excellent versions of Bookman and Bookman Italic supplied with *Fontkit* as well – the former comes in downloadable font formats, although you can convert and rescale it into GEM format with a bit of effort. In fact, it's not unusual to have fonts of this quality selling on their own for more than the asking price of the *Fontkit* package! Messing around with *Fontkit* and *Timeworks DTP* is a lot of fun and very worthwhile. **stf**

■ **Timeworks DTP is £99.95 from Electric Distribution ☎ 0480 496666**

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ST Club/0602 410241

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FORMAT VALUE	90%
A true bargain	

The Competition

For the price – none. *Fontz* (£24.95 from Neo-concept ☎ 0895 444433) is not as good, and while *Font Designer* (£60 from PCG ☎ 0229 836957) offers vector fonts it requires expensive add-ons which bump up the price quite considerably

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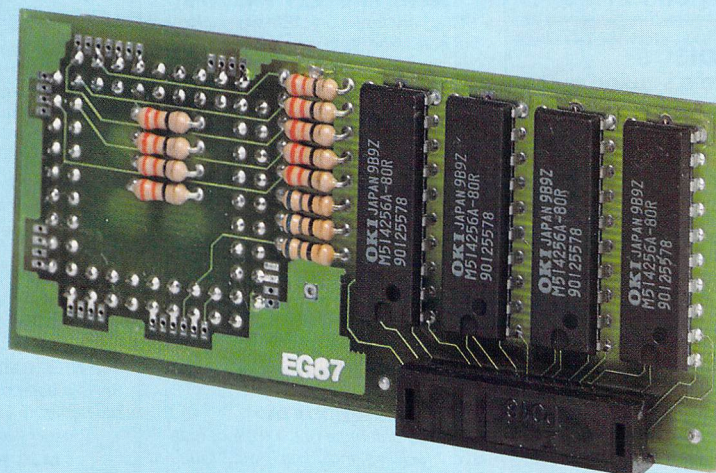
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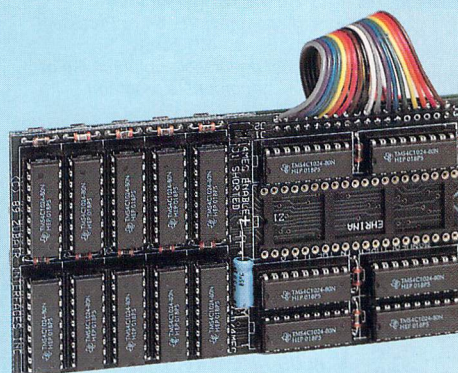
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Prop M. J. Cooper

*There's more to improving your ST than simply plugging in those terrific add-ons, so whether you want to do more or just need to know why the simple way didn't work, **FORMAT** Technical Editor Neil Jackson has the answer*

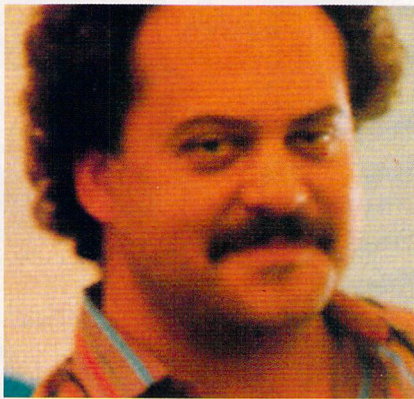


desktop

WHAT'S IN A NAME, WE ASK INNOCENTLY

Okay, okay, it's a fair cop! Back in the January issue of this organ (the huge, unforgettable issue 18), **DESKTOP** told the world that ST stood for Sam Tramiel. Hohohoho! Our little jokette – if we'd done it in April, you'd have known it was an April Fool, so we did it in January! (*That's enough excuses – Ed.*)

Cameron Black from **Aberdeen** was the first (of many) to let us know what ST actually stood for. It's an acronym for Sixteen Thirty-two, which refers to the internal workings of the machine: the 68000 processor which is the heart of the ST has a 16-bit external data bus, but internally it has a 32-bit one, hence the name. The new all-hallowed TT machine has a 32-bit internal and a 32-bit external bus, so TT means Thirty-two Thirty-two and actually has nothing to do with racing around small islands on motorbikes. Elementary, my dear Watson.



■ Sam Tramiel, high-ranking Atari US official. Was he the man the ST was named after? I think we should be told!

LEARNING FROM OLD MISTAKES

Lee Bohan from **Workshop** wants to know if there's an implementation of the programming language FORTRAN for the ST. A strange request at first glance, but when you consider that most universities are still teaching FORTRAN in their Computer Studies courses it makes sense.

The good news is that there is indeed a version of FORTRAN. It's called *Pro Fortran* and it's made by Prospero. Silica/SDL can let you have a copy (which works in both colour and monochrome) for the princely sum of £89.95. *Pro Fortran* is a professional development system with a compiler, an editor and a linker. Undergraduates with STs (and a masochistic streak) should talk to Silica on ☎ 081 309 1111.

FIRED AND FORGOTTEN

A mouse problem is troubling **Marcus Peterson** from **Stoneybridge**. He's suffered many times from a curious situation when he boots up: his ST makes a clicking, buzzing sound and he can't select files using his left mouse button. What's happened?

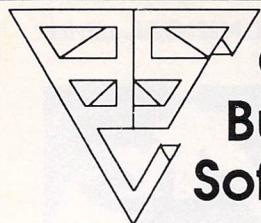
The problem is caused by the presence of a joystick in Port 1 which has its auto-fire button switched on. When you reboot your ST, it thinks the right mouse button and the joystick are being repeatedly pressed. The ST gets into a bit of a state and makes the key-click each time, causing the buzz, and the left button doesn't work because it's not being read as frequently as the auto-repeating joystick. Just turn off the auto-fire, reboot and breathe safe in the knowledge that everything's okay.

SINGULARLY HARD WORDS

Michael Dollan from **Newcastle** writes to ask **DESKTOP's** advice on what to buy for his ST and causes much head-scratching. He owns an old 520 STFM which is unfortunate enough to have a single-sided disk drive, and he's noticed that Power Computing has for sale an upgrade



■ The common or garden joystick – could this be the reason your ST is refusing to wake up properly? Is it why your mouse is being unselective? See "Fired and Forgotten"



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kit which gives you a double-sided drive. How complex is it to fit? Could a mechanically-minded 14 year old do it without causing the premature death of the ST?

The answer is a simple yes, provided you tackle the job with a certain amount of preparation. You need a screwdriver or two (one flat-bladed, the other philips or cross-headed) to get the casing off the ST and remove the old disk drive. A decent pair of pliers (preferably needle-nosed) enables you to remove the shielding without damage, and then it's a straightforward job of disconnecting the old drive, (remembering where the two plugs fitted) and replacing it with the new drive. Then reassemble the whole lot and Bob is indeed your Mum's brother.

Michael also asks whether *DESKTOP* thinks a word processing package plus a printer would be a better move than getting a hard drive, and what are the best choices in both camps?

After much pondering, *DESKTOP* realises it can't answer that question directly. It depends what you really want to do with your ST. If you're going to be using it to do a lot of document-writing and printing out, then a hard drive is less important (at first) than a decent Star printer and a copy of either *ST Writer Elite*, *Protext* or *1st Word Plus*. But if what you really want to do is save oodles of drawings, programs and database records, then a hard drive is certainly the higher priority.

The choice is entirely yours, Michael, but *DESKTOP* recommends that you deal with your single-sided problem first, as should every single-sided user. Apart from the endless hassles of disk swapping, the biggest problem is that sooner or later the software companies are bound to stop supporting the old-fashioned, handicapped version of the now-mighty ST.

■ Power Computing are on ☎ 0234 270133, Star on ☎ 0494 471111. *1st Word Plus* (£79.95) comes from Electric Distribution ☎ 0480 496789, *Protext* (£99.95) from Arnor

☎ 0733 68909. *ST Writer Elite* is a Public Domain program and can be obtained from most PD libraries. One that has it is Softville on ☎ 0705 266509 – see PD pages, beginning page 97, for others.

■ **For a round-up of all the add-ons worth thinking about, see this issue's special upgrade feature, beginning on page 22**

STRETCHING A POINT

Another of example of Atari's stupidity and incompetence is highlighted by **Rob Chadwick** from **Guildford** who suffered great pains while attempting to plug joysticks and mice into his ST. Why, oh why did Atari put the connections for these things underneath the keyboard?

Er, um, well, there doesn't seem to be a reason. In fact the very earliest STs (the ones without TOS on ROM, internal floppies or TV modulators) actually had the ports on the side of the casing, in a highly ergonomic and acceptable position. But all that is history now, and you have only one way of easing this constant hassle. Microdeal (☎ 0726 68020) can supply you with a set of joystick extenders for the paltry sum of £6.95. These special cables fit into the joystick and mouse sockets and have identical sockets on the protruding end. No more having to lift up the keyboard, spilling coffee and disks to the four winds. In short, a dead-useful bit of kit which no ST owner should be without.

EVERYTHING, INCLUDING THE SYNC

Robert Marks from **Harpenden** writes to ask if there's a stand-alone program which can change the ST's monitor sync rate from 50 to 60 Hz, which would produce a clearer, taller

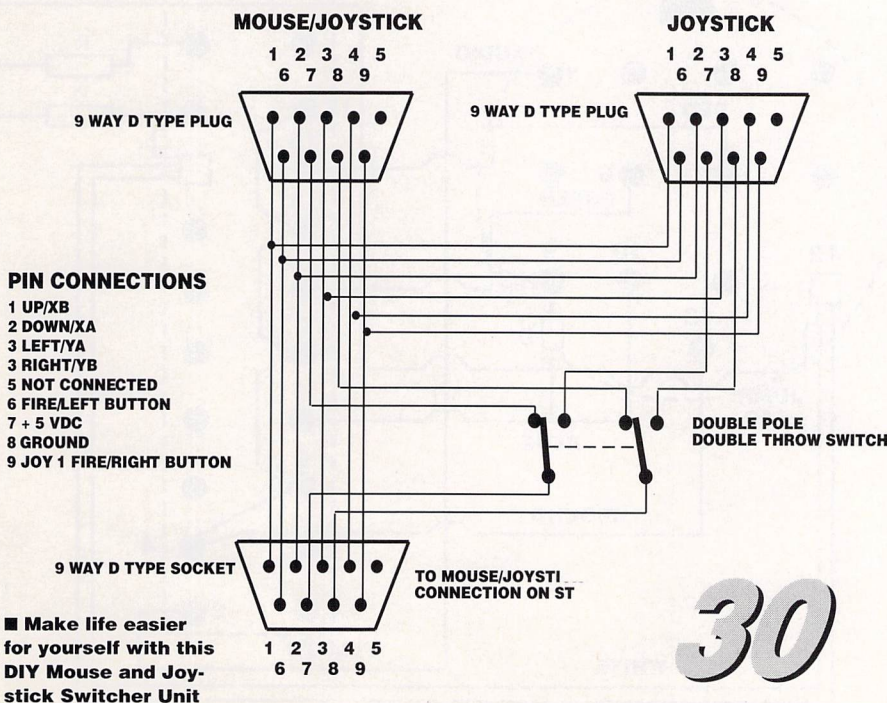
picture on his Philips CM8833 monitor. The simplest way is to use the ST startup program *ACC_SEL* which was free on *ST FORMAT* Cover Disk 18 (January 1991) and has a 50/60 Hz option.

Robert also asks is it's safe to run his monitor at 60 Hz and can he incorporate the 50/60 Hz option in his own programs. Yes and yes again. You won't hurt your monitor and the ST has a special register tucked away which can be written to change sync. The register is stored at address FF820A (hex) and bit 1 is the sync flag.



■ **These insignificant-looking, inexpensive little bits of wire could end up saving you more time and trouble than virtually any other add-on – see "Stretching a Point"**

UPGRADE IT YOURSELF (PART ONE)



■ **Make life easier for yourself with this DIY Mouse and Joystick Switcher Unit**

Next up is a tip from **Adrian Evans** from **West Bromwich** for those of you who are tired of unplugging your mouse to put in your other joystick. He's designed a Mouse/Joystick Switcher and sent it in for us to tell you about.

You need:

- a double-pole, double-throw type switch,
- a length of cable which has nine or more insulated wires inside,
- two nine-way, D-type plugs,
- a nine-way D-type socket
- and a neat little box to put it all into.

All of these can be obtained from most electronic hobbyist shops or from Maplins by mail order. Simply solder the wires as indicated in the diagram at left and mount the switch and the two plugs inside the box, leaving the socket on a short length of lead. Plug this into the ST's mouse port and the mouse and joystick into the plugs on the box. You never need to remove it again! Nice one, Adrian.

■ **Maplins Electronics, PO Box 3, Rayleigh, Essex SS6 8LR, ☎ 0702 554161 (Sales) or ☎ 0702 552911 (Enquiries)**

➤ UPGRADE IT YOURSELF (PART TWO)

sync flag.

Another project to try comes from **Dave Houghton** in **Mitcham**, who's replaced the buttons on his tired old mouse and improved its response for less than three pounds!

All you need are two lever-type sub-miniature microswitches, which you can get from Tandy (catalogue no. 2750016) for around

£1.30 each. To assemble them, you must first unscrew your mouse's casing using a philips head screwdriver and unplug the lead which connects to the circuit board.

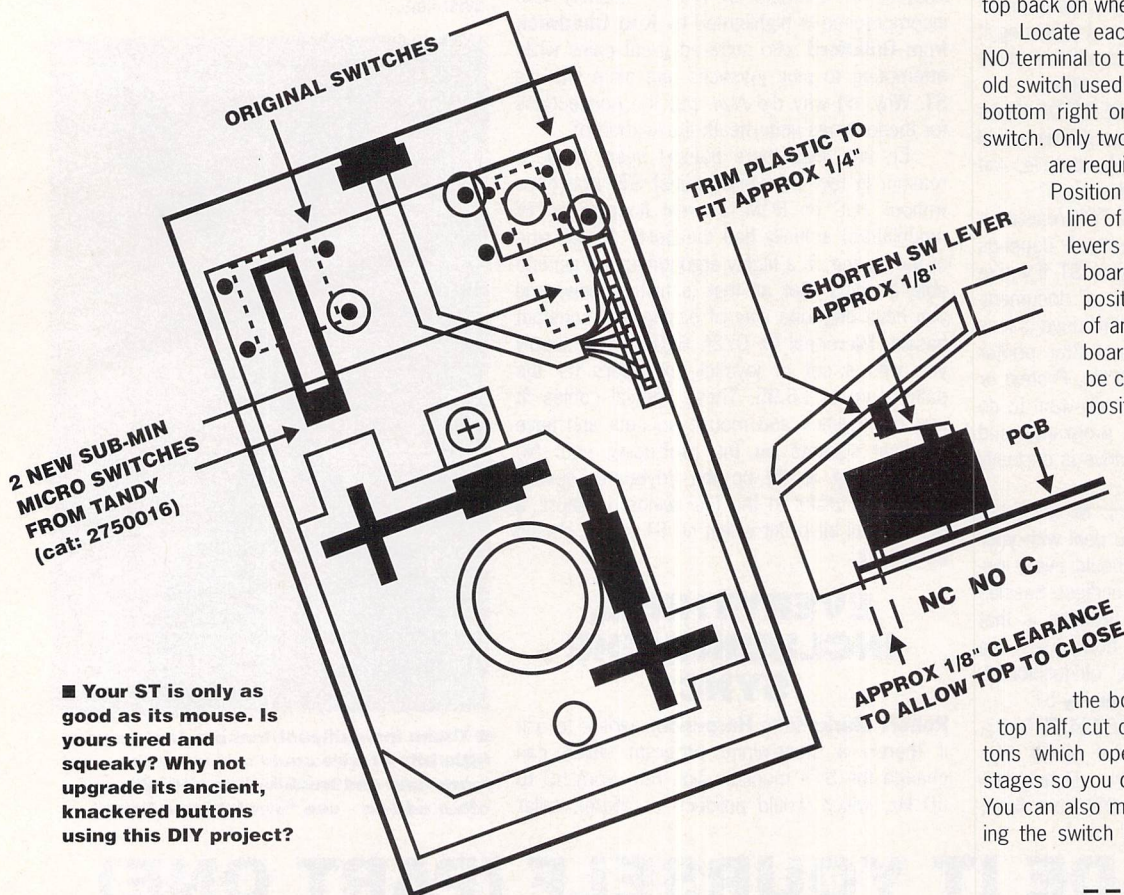
Remove the two screws which hold the circuit to the bottom half of the casing (being very sure you don't touch the other two screws which are glued in position), and remove the entire

board. Turn it upside down on something soft and desolder the two mouse button switches. Taking your new microswitches, solder a short length of stiff wire to the Common (C) and another to the Normally Open (NO) contacts on each microswitch. Stiff wire helps to support the switch while it's being soldered in place. Then cut one-eighth of an inch off the end of each switch lever, so you can fit the mouse casing top back on when you reassemble the thing.

Locate each switch position, aligning the NO terminal to the top left solder pad, where the old switch used to be, and the C terminal to the bottom right one. Do the same for the other switch. Only two of the original four solder pads are required in each case.

Position the new switches on the centre-line of the old switches with the switch levers pointing to the top of the circuit board (the cable end). They must be positioned approximately one-eighth of an inch from the top edge of the board or the top of the mouse can't be closed. Then solder the wires into position, ensuring that no other part of the circuit board or its components is in contact with the switches. When everything is connected and clear of contact, glue the switchboxes into place using a layer or two of epoxy glue. Make sure you don't get glue on the levers.

Refit the circuit board into the bottom half of the casing. On the top half, cut down the plastic part of the buttons which operate the switches. Do this in stages so you don't take too much off at once. You can also make small adjustments by bending the switch levers slightly. When done, refit



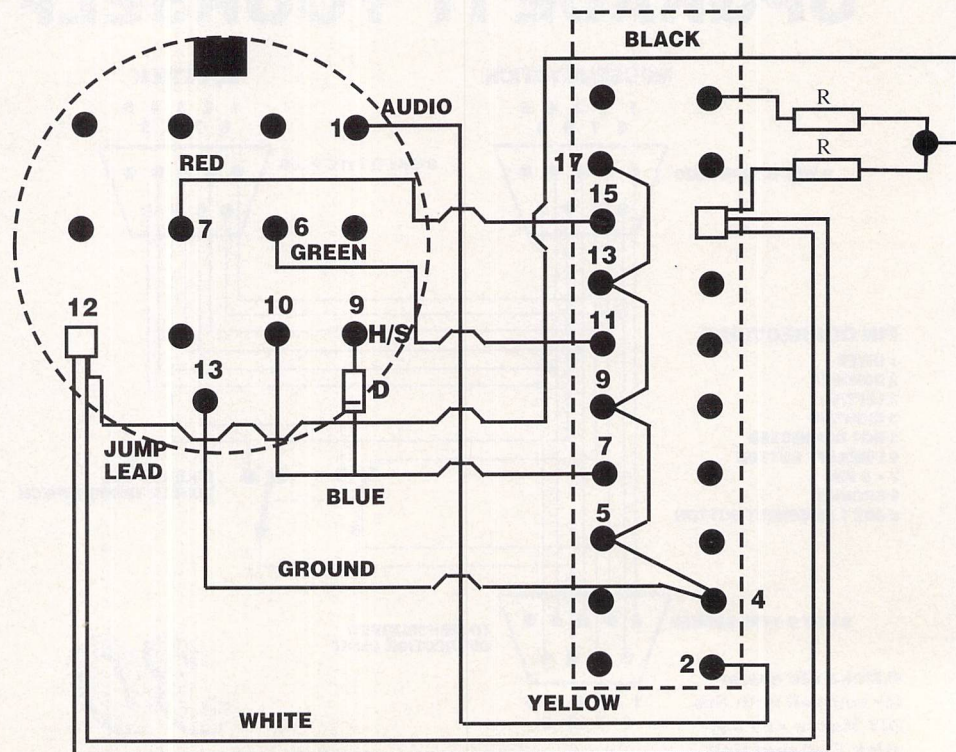
■ Your ST is only as good as its mouse. Is yours tired and squeaky? Why not upgrade its ancient, knackered buttons using this DIY project?

UPGRADE IT YOURSELF (PART THREE)

The mysteriously Christian-nameless **PJ Ellis** from **Swindon** has a question and another neat little project for improving your ST. PJ has a 520STFM and wants to know if he can make it run Amstrad PC programs (Ugh! What a concept!) and work with MSDOS. Yes, is the straight answer. Silica Shop (☎ 081 309 1111) are the UK distributors for ATonce, the hardware PC emulator. This neat little gizmo costs around £200, and they do recommend that you get an engineer to fit it.

As for the tip: it's a SCART lead to connect your ST to a Sony KV-M14TU television and give a clear, crisp display using that TV's ➤

■ For the clearest picture, turn to **ST FORMAT**. For your viewing pleasure, try this DIY ST to Sony SCART lead project



ability to display pure video signals from your monitor socket. Apparently it's better than the standard lead PJ originally bought for this job.

For this project you need:

A SCART plug

Signal diode NA091 or NA095

Two 150 ohm resistors

A 13-pin DIN plug for the ST monitor socket

A length of six-core cable with shielding

These items should all be obtainable from your local electronics hobbyist shop or from Maplins Electronics, PO Box 3, Rayleigh, Essex SS6 8LR, ☎ 0702 554161 (Sales) or ☎ 0702 552911 (Enquiries).

Connect the signal diode to pin 9 of the DIN plug, noting that you have the marked end furthest away from the connection. Join this end of the diode to pin 12 of the DIN plug with a small length of wire. At the SCART end, connect a 150 ohm resistor to pins 16 and 20 and join them together as shown in the diagram on page 130. Then carefully connect each wire of the multi-core cable, using the diagram for reference. For the connection between pin 13 (DIN) and pin 4 (SCART) use the screening shield of the multi-core cable. Happy viewing! **stf**

WARNING: Don't attempt any DIY modifications unless you can handle a soldering iron and know what you're doing. If you can't tell the difference between a capacitor and a Crunchie bar and make a mess of it, it can cost you real money to get things put right. Note also: any tinkering you do can invalidate the manufacturer's guarantee.

ST TO SCART: PIN-TO-PIN CONNECTIONS

ST DIN PLUG

PIN	FUNCTION	COLOUR
1	AUDIO OUT	YELLOW
6	GREEN VIDEO	GREEN
7	RED VIDEO	RED
10	BLUE VIDEO	BLUE
9	HORIZ SYNC	BLACK
12	VERT SYNC	WHITE
13	GROUND	SHIELD

SCART PLUG

PIN	FUNCTION	COLOUR
2	AUDIO IN	YELLOW
11	GREEN VIDEO	GREEN
15	RED VIDEO	RED
7	BLUE VIDEO	BLUE
20	HORIZ SYNC	BLACK
16	VERT SYNC	WHITE
4	THEN TO pins 5,9,13 AND 17	

WE WANT YOUR DESKTOP TIPS

Are you the sort of ST owner who just loves tinkering, the sort who can't get anything working right, or somewhere in between? Whichever you are, **DESKTOP** features the best technical advice around, so if you've got a tip, a short cut, an undocumented feature, a bug – anything you've found that helps you get more from your ST – or even a technical problem, we want to hear about it! That way you can share your information with over 50,000 fellow ST enthusiasts and possibly even win a prize of up to £50. And if it's a problem – well, if we don't know the answer, someone will!

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My tip is: Games ☐ Desktop ☐ Music ☐ Graphics ☐ Cover Disk ☐ Other ☐

Brief description of tip _____

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2. What sex are you?Male ☐ Female ☐**3. How much do you earn a year?**

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4. Which computer do you own?

520 ST with single-sided drive* ☐
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 1040 ST ☐ Mega 2 ST ☐
 520 STE ☐ Mega 4 ST ☐
 1040 STE ☐ TT ☐
 Mega 1 ST ☐ Stacy ☐

* If you have a second disk drive or upgraded single-sided drive, please tick the double-sided drive box

5. What hardware do you (a) own or (b) intend to buy during 1991?

	own	intend to buy
Second disk drive	☐	☐
Hard drive	☐	☐
Joystick	☐	☐
Modem	☐	☐
Memory upgrade	☐	☐
Printer	☐	☐
Laser printer	☐	☐
Monitor	☐	☐
Scanner/Digitiser	☐	☐
Mouse	☐	☐

6. What software do you (a) own or (b) intend to buy during 1991?

	own	intend to buy
Word processor	☐	☐
Desktop Publishing	☐	☐
Database	☐	☐
Spreadsheet/Accounts	☐	☐
Graphics	☐	☐
Music software under £70	☐	☐
Music software over £70	☐	☐
Communications	☐	☐
Assembler	☐	☐
BASIC	☐	☐
Other programming languages	☐	☐
CAD	☐	☐
Educational	☐	☐

7. Will you be buying games in 1991?Yes ☐ No ☐**8. How much do you use your ST for the following?**

	main use	a lot	some	very little	never
Music	☐	☐	☐	☐	☐
Word processing	☐	☐	☐	☐	☐
Graphics	☐	☐	☐	☐	☐
Games	☐	☐	☐	☐	☐
Business	☐	☐	☐	☐	☐
Desktop Publishing	☐	☐	☐	☐	☐
Programming	☐	☐	☐	☐	☐
Educational	☐	☐	☐	☐	☐

questionnaire

Whether this is your first issue of ST FORMAT or your 21st, we want to hear your comments. You can help make Britain's top ST magazine what you want it to be – even better!

9. As regards the ST, do you consider yourself to be –fairly experienced? ☐ a novice? ☐an expert? ☐**10. Which computer magazines do you read?** (please give a rating out of ten for each)

ST FORMAT	/10
	/10
	/10
	/10
	/10

and non-computer magazines?

	/10
	/10
	/10

11. Rate our regular sections out of ten and indicate whether you want to see more or less of them

	more	same	less
News	/10 ☐	☐	☐
Cover Disk	/10 ☐	☐	☐
Previews	/10 ☐	☐	☐
Game reviews	/10 ☐	☐	☐
Public Domain	/10 ☐	☐	☐
Music	/10 ☐	☐	☐
Education	/10 ☐	☐	☐
Competitions	/10 ☐	☐	☐
Desktop	/10 ☐	☐	☐
Gamebusters	/10 ☐	☐	☐
Letters	/10 ☐	☐	☐
Adverts	/10 ☐	☐	☐
Hardware reviews	/10 ☐	☐	☐
Software reviews	/10 ☐	☐	☐

12. What are the main reasons you buy ST FORMAT? (tick only two please)

For the Cover Disk	☐
For the reviews of new products	☐
For our extensive hints and tips	☐
For our tutorials and series	☐
For the adverts	☐
For up-to-date news	☐
For a good general read	☐

13. What features would you like to see more of in future issues of ST FORMAT? (tick only two)

Games features	☐
Games round-ups	☐
Serious software comparisons	☐
Hardware comparisons	☐
Interviews and programmer profiles	☐
Tutorials for individual programs	☐
Programming	☐
Music	☐
More beginners' introductions to areas of computing (eg modems, DTP etc)	☐

If you have any suggestions for other features, write them in the space provided:

14. How many issues of ST FORMAT have you bought?**15. How many issues of ST FORMAT do you expect to buy in the next 12 months?****16. How many people read your copy of ST FORMAT?****17. What has been your favourite cover on ST FORMAT?** (Tick the issue number which appealed to you most – a reminder of recent covers can be found on page 136)

1 ☐	5 ☐	9 ☐	13 ☐	17 ☐
2 ☐	6 ☐	10 ☐	14 ☐	18 ☐
3 ☐	7 ☐	11 ☐	15 ☐	19 ☐
4 ☐	8 ☐	12 ☐	16 ☐	20 ☐

18. In issue 18 we gave away a full-price game and charged only £1 more for the issue. Would you like to see more two-disk issues in the future?Yes ☐ No ☐

Comments

19. What sort of programs would you like to see more of on future Cover Disks? (tick two)

Game demos	☐
Reader programs	☐
Graphics utilities	☐
Public Domain software	☐
Music programs	☐
Business demos	☐
Other (specify):	

20. Please use this space to make any comments about how ST FORMAT can be improved.

■ Now just tear out this page, pop it – or a photocopy – in an envelope and send it to: ST FORMAT Questionnaire, 30 Monmouth St., Bath BA1 2BW. Help us to give you the articles and Cover Disk programs you want! **stf**

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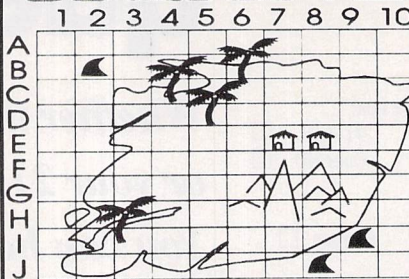
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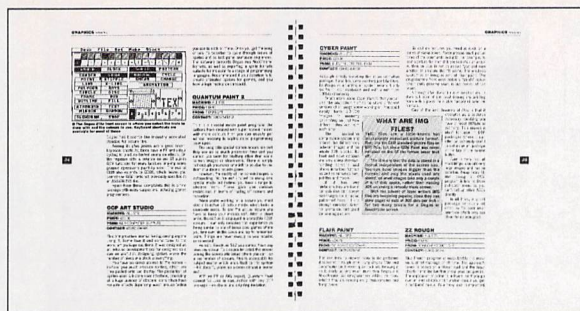
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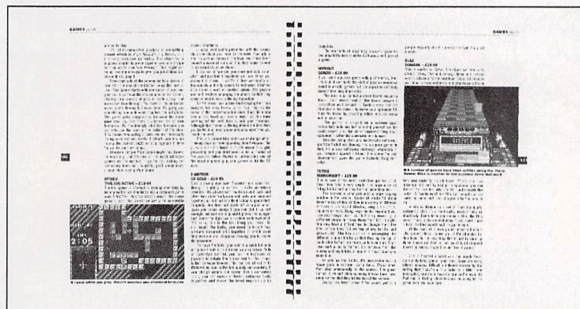
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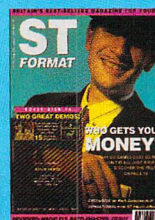
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Inside: Full, definitive review of *DPaint 2*, plus tutorial on getting the most from the Cover Disk demo



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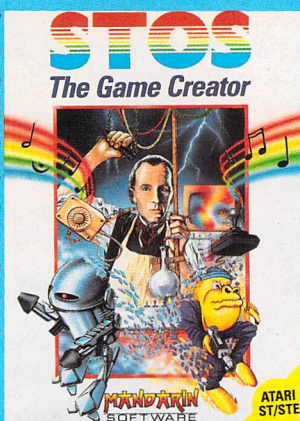
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Public Education

David Jones surveys a ton of Public Domain educational software for five to eight year olds in the second instalment of **FORMAT's complete guide**

For children in the 5 to 8 age range, there is plenty of commercial educational software, much of it quite pricey, but not so much in the Public Domain. This is software which is free for anyone to use, and which you can obtain from PD libraries for a nominal service fee. Most of it is specialist material written for older children, but **FORMAT** has ferreted out a fair selection of programs suitable for 5 to 8 year-olds.

Beware, though: PD libraries are rather devious because they often mix educational material with games – sometimes harmless recreational games such as *Tic Tac Toe*, but at worst gambling programs such as *Roll 'n' Nudge*. BSoft and PDQ are two of the worst offenders.

PD edsoft for the 5 to 8s can help with basic numeracy and literacy. In the numeracy category are 11 programs of varying worth. *RB Maths* is the very worst. *First Maths* is by far the best, with *Shipwreck*, a mathematical adventure, not far behind.

The best bargain must be the demo version of Softstuff's *Things To Do With Numbers*. There are only a few differences between the demo and the commercial release. The latter, at £20, is reasonable value, but you'd be daft not to buy the virtually identical demo at only £2.

Half a dozen of these programs aim to improve literacy skills, and most fail. *Alphafit* and *Kid's Keyboard* are just useless. The one spelling program is reasonable but a little dated, and uses an unbearable speech synthesizer. Two particularly excellent ones stand out from the crowd – *Puzzle*, a jigsaw generator, and *Funface*, a superb identikit simulation demo.

Next month we show you how the ST's educational capabilities don't stop halfway through primary school. There is a wealth of pre-GCSE material available and with revision and study aids, a fairly awesome collection of software.

BASIC NUMERACY/MATHS

First Maths

ST Club – EDD9

Simple and stimulating, this colourful program includes three games. An adult can set the parameters, and children are encouraged to

STF RATINGS	
*	Ugh!
**	Probably not
***	Maybe
****	Why not?
*****	Go for it!

learn by the novel reward screens: when you add up a set of eggs correctly, for example, you get to see those eggs hatch into chicks. Recommended for children of 5 to 6. *****

Flashcard (Colour Version)

Floppyshop – 44C, Goodman – GD804, Page 6 – ST163, ST Club – EDD9

Okay, but a rather odd program. Large sums appear on the screen – type in correct answers and you're rewarded with flashing screens and animated shapes. Mono version available from ST Club (EDD9). Don't confuse with *Flashcards* (see Miscellaneous programs below). ***

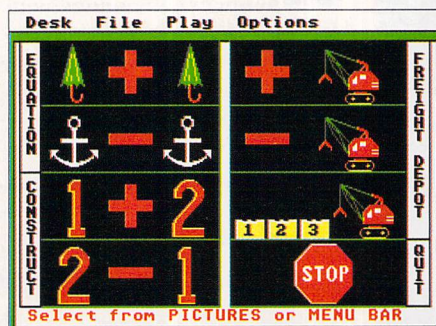
Maths Made Easy

Floppyshop – GAM99C, Riverdene – EDU125

If you like digitised speech, you may well like the questioning voice. Otherwise, boring. *

Number Go Round

BSoft – KI4, Floppyshop – GAM78C, Goodman – GD805, Pdom – A101, ST Club – EDD10
Colourful program featuring 18 open books,



■ This is the bright and interesting main menu from the excellent *First Maths*

each showing a different maths problem. A number appears at the top of the screen and you must pick the problem which matches that number. It gets easier as you go along. ****

Number Maze

BSoft – KI4, Goodman – GD805, Pdom – A101

A box contains 140 numbers, two of them highlighted. Use simple mathematical rules to move from box to box. Interesting, but confusing, especially for the young. ***

Racecard

PDQ – EDUC31

A mathematical race game that takes ages to load. To make your car speed ahead of the competition, you must answer questions quickly and accurately. It's a shame the games are far too short, though. ****

RB Maths

Page 6 – ST114

Simple maths questions on a plain white screen. Constant interference by stupid comments in the menus. Absolute rubbish. *

Shipwreck

Goodman – GD807, STOS PD – SPD27

This is a mathematical adventure game which appeals to older children. You have to answer four sequences of questions correctly to finish, each sequence representing a hazard through which you must guide the shipwreckee. You can also change the level and type of questions at the start of the game. All the sequences are very well animated and great fun to watch. An excellent concept, well drawn and superbly animated. Recommended. *****

STOS Maths Test

Goodman – GD805, ST Club – EDD5

Tests four main maths functions at various levels. Okay, but strange use of colours makes screen visibility a bit dodgy. ****

STOS Tables Test

Goodman – GD809

Enables you either to check your tables or have a test. Nothing spectacular. ****

Things To Do With Numbers

ST Club – EDD10

There's very little to separate this so-called demo from the real thing which costs nearly £20. Three substantial programs: a simple but beautifully drawn addition/subtraction program, a time-telling tutor and a coordinates game. Highly recommended. *****



■ In *Number Go Round* match the number at the top of the screen with the problems

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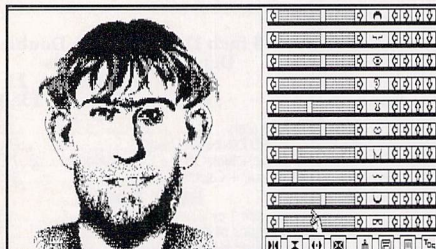
MISCELLANEOUS

Clever Clogs

Goodman - GD809
Mastermind-type game. This is supposed to help you develop logical thinking. **

Fun Face Demo

BSoft - KI6
A super program that introduces Information Technology, with interesting and often hilarious results. The only difference between this and the over-priced commercial release is that SAVE and PRINT are disabled. ****



■ Plenty of laughs with the *Fun Face* demo - mix up those features and enjoy!

Fun School 2 Demo

Page 6 - ST187
Is there anyone with a micro and kids who hasn't bought the excellent *Fun School 2*? Unfortunately, on this demo you can only watch. **

Flashcards

Pdom - A73
Probably the poorest quiz game, with badly written questions on a nearly blank screen. *

Jigsaw

Floppyshop - GAM116C
Although aimed at young children, this odd jigsaw generator is far too difficult to use. Loads of pics but most are unsuitable for children. **

Mouse Piano

Floppyshop - GAM44C, Page 6 - ST163
Turns the ST into a simple synthesiser controlled by the mouse. You can access 20 voices using the Function keys. ***

Picture Concentration

ST Club - EDD8
Look for matching pairs of pictures behind 40 closed doors. Too many doors make this game confusing for the young. **

Puzzle

PDQ - EDUC38
All of the menus are in French but most are self-explanatory. In contrast to *Jigsaw*, this is an excellent puzzle generator. It contains five pic-

SPELLING AND LITERACY

Alphafit

ST Club - EDD10
Find letters on a grid. Type in their position. *

Hangman

PDQ - EDUC31, ST Club EDD5
The popular game transferred to the ST, with a digitised voice. Good with the sound off. ***

Kid Publisher v2.1

BSoft - KI5, Goodman - EDU3,
Page 6 - ST114, Pdom - A100,
ST Club - EDD4
Good, but a poor relation to the later version. Create pages of text as well as pictures. ****

Kid's Keyboard

ST Club - EDD9
Type on the keyboard and get large letters on-screen. Like an introductory WP, except you can't use <Return> or PRINT the results. *

Rebus (Colour version)

BSoft - KI6, Pdom - A131(Mono version),
ST Club - EDD4
Produces stories and letters in *Rebus*-speak - a picture of a car followed by a "T" means CART, and so on. Plenty of pictures and has PRINT and SAVE facilities. ****

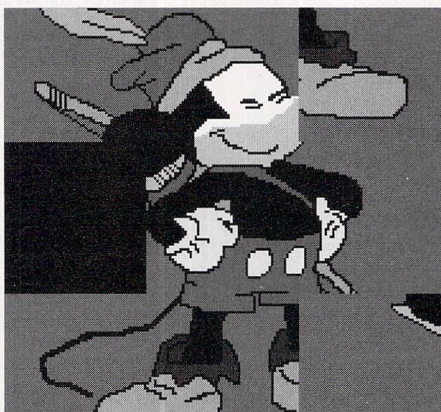
Spelling Made Easy

Floppyshop - GAM99C,
Riverdene - EDU148
Consists of two programs, *Quizspell*, where you must type in the word spoken by a poor

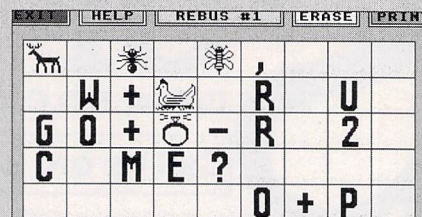
tures - you can load others - and has a wide range of skill levels (from 9 pieces to sort out to a virtually impossible 324!) ****

Quiz

Goodman - GD803
A quiz generator aimed at younger children but it's exceptionally awkward to use. *



■ *Puzzle* is an excellent slide-the-squares game with an enjoyable selection of pics



■ "When are you going to see me?" says *Rebus* - good fun but of doubtful value

digitised voice, and *Make Spell*, a quiz generator. Would be fine but for the voice. ***

Wolf and the Kids

Page 6 - ST297
This is an odd little graphics and text adventure. Mama decides to go out shopping and she tells her children to stay in the house. Unfortunately, the kids are in danger from the Wolf - he's on the loose and very hungry! There are various possible outcomes but you can discover them all far too quickly. **



■ Listen to her, kids, and avoid Mister Wolf who's intent on some goat burgers

Sensori

BSoft - KI1, ST Club - EDD9
Listen to a combination of notes and replay them on the keyboard. Not very interesting. **

Super Sim

Floppyshop - GAM44C, Page 6 - ST163,
ST Club - EDD9
Inferior version of *Sensori*, if that's possible. *

Treasure Search

Pdom - G76, STOS PD - DPD15
A large, rambling program but an interesting coordinates game. Well drawn screens encourage you to search for treasure. ****

Where is it?

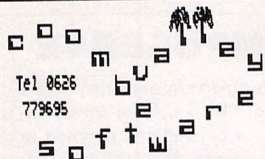
PDQ - EDUC31
Find five Atari Logos hidden in a small grid. *

Zoomaker

STOS PD (uncatalogued)
Children must identify animals with simple yes/no responses, and are then encouraged to draw various animal pictures. This is a simple but effective program. stf ****

WHERE TO GO FOR PD EDSOFT FOR KIDS

You can obtain the educational software listed above from these PD libraries. For other PD software, see *FORMAT'S* regular PD pages, beginning on page 97, including a full PD library directory.
BSoft, 33 Corsham Road, Calcot, Reading RG3 5ZH
Floppyshop ST, 50 Stewart Crescent, Northfield, Aberdeen ☎ 0224 691824
Goodman PDL, 16 Conrad Close, Meir Hays Estate, Longton, Stoke-on-Trent, Staffs ST3 1SW
Page 6 Publishing, PO Box 54, Stafford ST16 1DR ☎ 0785 213928
Pdom PD Atari, PO Box 801, Bishop's Stortford, Herts CM23 3TZ ☎ 0279 757692
PDQ, PO Box 38, Eastleigh, Hants SO5 5HB
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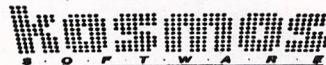
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87%

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*This month we kick off with the first part of a new **FORMAT** series in which Andrew Hutchinson shows you how to use your ST to communicate with the world*

You've taken the modem out of its box and plugged it into your ST, but now you're stuck on what to do next. Your first priority is definitely to get some comms software running on your ST. You can do this in two ways: either pay lots of money for a

mediocre package, or pay three quid for an excellent Public Domain program.

There really are very few commercial packages worth looking at and **FORMAT** strongly recommends that you use a PD program. This tutorial is based on *Vanterm*, which appeared on our Cover Disk 17. I assume you own an auto-dial modem because they are very cheap. If you don't, then try and get hold of one.

First, work out who you want to communicate with. There are a few numbers at the end of this article to start you off. Once you log on one board you'll soon discover hundreds more. A good place to start is with a bulletin board because they don't charge you to log on to their computer – computer enthusiasts run them for fun. You can find a terrific amount of information in a bulletin board. What's more, there are hundreds of ST specific boards offering news on the ST, Public Domain files and sometimes networked (national) message bases. Once you're logged on you can leave mail, download files and access information as well.



■ **Owning a modem, big or small, gives you access to the exciting world of comms**

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3. My Little Phoney, Oxford,	(0865) 773 277	2400
4. Lightfingers Place, Bournemouth	(0202) 485 723	2400
5. STun – Euronet HQ, Stockport	(061) 429 9803	2400
6. Micro-Mola, Plumstead, London	(081) 316 7402	2400
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8. The Penthouse, Whitehall, London	(071) 930 3903	2400
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11. Sheffield Alt. Sol. Sheffield	(0742) 325 232	2400
12. Brunel BBS, Bristol, Avon	(0272) 584 352	2400
13. The Bath TUB, BBS Bath, Avon	(0225) 480 103	2400
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17. ST Brum BBS, Birmingham	(021) 427 8077	2400 R
18. The Magic Castle, Birmingham	(021) 430 3761	2400
19. The Silver Link, Telford, Shrops	(0952) 677 002	1200 #
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KEY + – Denotes 21:00 to 05:00 hours only # – Denotes 22:00 to 08:00 hours; 1200 baud only R – Denotes call-back answering service

ON COMPUSERVE

CompuServe is an American database with a massive number of files available for downloading. There are large sections devoted to the ST and every month **FORMAT** lets you know what's happening on-line in the States.

If you want to subscribe to CompuServe ring their free customer service line, ☎ 0800 289458. It costs £19.95 to join, then \$21.50 (about £10) for every hour you're on-line.

There are three main Atari forums, the Arts, Productivity and Vendors' forums. The first includes a section for on-line newsletters such as *Z-Net* and *ST-Report*, which are very quick with the news. One of the most interesting programs in this forum is *PERUSE.ARC*, a text reader with a built-in *Degas* display in any resolution. Best new program in the Productivity forum is *TIMDRV.ARC*, a combined screen saver, disk access indicator and system time clock display.

HOW TO LOG ON TO A BULLETIN BOARD

Okay, so I know what a bulletin board is, but how do I go about getting on-line with one? Just follow these guidelines and you can't go wrong.

● Power up your ST and modem and load up *Vanterm*. Store a few of those numbers in the program's dial directory. Move the cursor over to "Edit dial directory" and click on it. Then click on an empty slot and finally click on "Edit."

● You can now enter the name and telephone number of the board. The display then prompts you for a baud rate (the speed of data transfer). This depends on two things – the speed of your modem and that of the modem you're talking to. Look at the speed of the bulletin board. If it says 2400 baud, it can accept all speeds up to and including that number. Thus with a 1200 modem you can set the figure to 1200, but if you have a 2400 baud modem then set it to 2400.

● Next enter the duplex setting. Don't worry about this – the vast majority of boards use full duplex. This means that both computers can talk at the same time. With half duplex they speak in turns. Now simply hit "F" and press <Return>.

● Now you can see the user name and password sections. These make logging on to a bulletin board with *Vanterm* very easy. You can enter your name here now although you won't know what your password is until you log on for the first time. Enter "Y" to confirm that everything's fine and then press the right mouse button to return to the main menu. Click on "Config" again and pull down the menu to "Save Configuration." You're now ready to dial the computer.

● Move the mouse over to "Dial" and click on the box showing the computer you want to dial. The screen changes and you can hear the modem dial the number. If the line isn't engaged and you dialled correctly, then you receive on-screen instructions about logging on for the first time.

That's it for this month, now you know more about how to get on-line to a bulletin board. Next issue we show you how to find your way around one without losing your way. **stf**

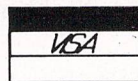
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seeing stars with GFA Basic

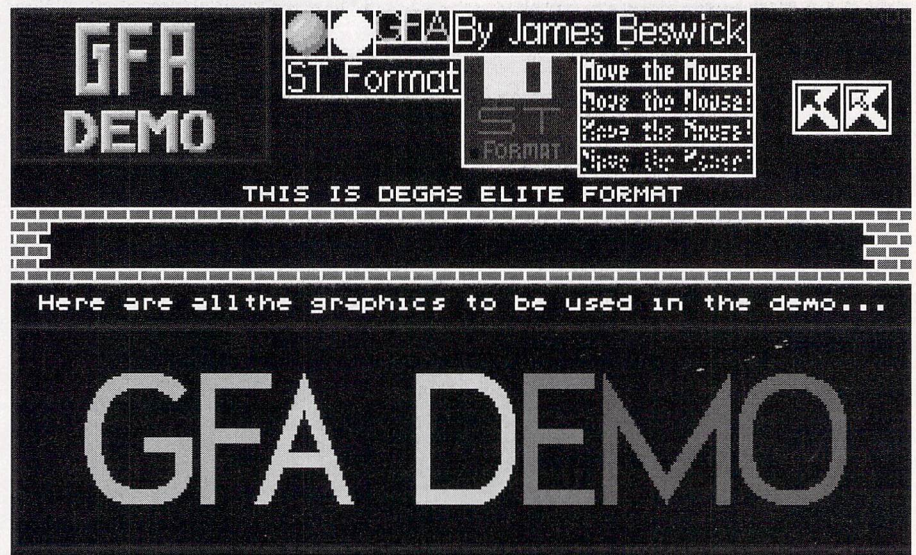


After last issue's introduction to GFA Basic, James Beswick reveals all about "sprites" and helps you through FORMAT's Cover Disk demo

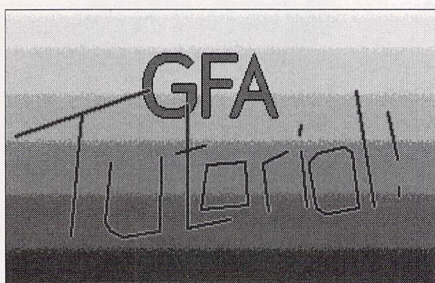
Last issue *ST FORMAT* brought you *GFA Basic 2* free on the Cover Disk, along with Part One of our exclusive tutorial. (Miss that? To order back issues, see page 136.) Now learn more about what you can do with your ST with Part Two included on this issue's Cover Disk – see page 43.

While *GFA Basic* has an impressive range of drawing facilities (see last issue), no respected programmer creates his game or demo without the aid of a drawing package. All the ships, aliens, people and other objects in any commercial game are drawn using art packages. These pictures of aliens and such are called "sprites." So, a sprite is a piece of graphical data that you can move from one place to another.

Unfortunately, dealing with sprites is a tricky affair. To use one, you must load up the screen on which it's stored – but there are a great number of art packages and they store pictures in an even greater number of formats. These include PI1, PI2 and PI3 (*Degas* low, medium and high resolution respectively), PC1, PC2 and PC3 (*Degas* compressed), NEO, ART, IFF and that's just the tip of the iceberg. The simplest



■ Get straight into *GFA Basic*! Follow the demo included on this issue's Cover Disk and before long you could be creating a starburst and manipulating sprites on your own



■ Thanks to *FORMAT's GFA Basic* tutorial, you can start designing your own demo

method is to load the *Degas Elite* "uncompressed" file format. This command in *GFA Basic* loads a PI1 file onto the screen:

```
load "filename",Xbios(3)-34
Void Xbios(6,L:Xbios(3)-32)
```

Next, find out the coordinates of the top left and bottom right of your sprites – I always use a small program in the file *SPRITES.BAS*. Once you've got their coordinates, isolate the sprites on the screen using the GET command:

```
GET X, Y, X2, Y2, Sprite$
```

X and Y are the coordinates for the top left corner, and X2 and Y2 are the coordinates for the bottom right of the sprite. Each sprite must be individually recognisable so it must have its own name, ending in a \$ symbol – as in "Sprite\$."

Once you pick up a sprite, you can put it down again using the PUT command. This is

how you animate objects. The routine PUT_GET2.BAS on the Cover Disk demonstrates this well. PUT comes in this format:

```
PUT X, Y, Sprite$
```

X and Y are the coordinates for the top left position of the sprite and sprite\$ is its unique name.

BACK TO THE DEMO

The demo we began last issue is still in its designing stage. So far it draws a frame or BOX, and places randomly coloured dots in the middle of the screen until you press a key and the screen is "wiped out" by a series of black boxes. The white box in the centre of the screen represents the "GFA Demo" logo. Let's now replace that box with the actual logo, supplied in

the demo on the Cover Disk (and here's one I did earlier...) with *Degas Elite*.

If you own *Degas Elite*, load up the file GFADEMO.PI1 and take a closer look at all the graphics for the demo. This clearly demonstrates the GETting and PUTting of sprites – the logo is a sprite itself. Load the file DEMO2.BAS into the editor and you see that the original file has undergone many changes – one of which is the presence of the logo.

The stars have also been altered. Up to now, there was a fast and thick spray of multi-coloured dots. But this presents several problems. Firstly, it doesn't stop and so eventually obliterates the screen. Secondly, it's possible for the dots to place themselves inside the box

WHAT YOU CAN DO WITH YOUR MOUSE

GFA gives you a great deal of control over your mouse. Are you sick of that arrow as a mouse pointer? Well, with *GFA Basic's* DEFMOUSE command, you have a choice of eight different pre-defined pointers. Using a more complex method, you can even make your own! But for now, load the file called DEFMOUSE.BAS to demonstrate this command.

You can also detect where the mouse is on the screen and whether any of its buttons is depressed by using another command called MOUSE. Type somewhere in your program:

```
MOUSE X, Y, B
X and Y equal the coordinates of the mouse
```

position (X being the horizontal coordinate and Y the vertical, as normal). B is a number from zero to three, showing which of the mouse buttons are held down. When B equals 0, no buttons are held down; when B equals 1, the left button is held down; when B equals 2, the right button is held down; when B equals 3, both buttons are held down.

There are many other things you can do with your mouse, but for now there are two other commands to remember – HIDE and SHOWM. These hide and show the pointer respectively, and have no parameters – that is, you simply type them in, without coordinates.

representing the logo, thus obliterating that as well. And finally, the dots aren't exactly "star colours." You don't tend to see purple stars in the sky – unless there's something very wrong with your eyesight! So now, the colours are restricted to the first five of the palette – all shades of grey, which look more convincing.

CHANGES ARE AFOOT

The only immediate changes you need to make are these: the key click can still be heard, so you need to turn it off. Type the following in the line before the CLS command at the start of the program. Remember that the CLS command clears the screen. Go to the beginning of the word CLS, press the <Insert> key and type:

Spoke &h484,peek(&h484) and 2

This all sounds like mumbo-jumbo but it's turning off the click by rewriting the system's keyclick control byte. The other change is to turn off the mouse pointer so it can't be seen – the HIDE command does this for us. Simply type in this command to switch off the mouse pointer.

That's it for the time being. If you've backed up your Cover Disk, you can safely practise all the commands we've looked at so far, until next month, when we take a look at conditional statements, some animation with sprites and more GFA graphics commands – and of course we continue with the GFA Demo. Until then, if you have any problems, however large or small, drop us a line at: GFA Tutorial Problems, ST FORMAT, 30 Monmouth Street, Bath BA1 2BW. **stf**

■ Excited by all this talk of sprites and demos? Want to get the most up-to-date version of *GFA Basic* and try it yourself? Turn to page 148 to find out how you can upgrade to *GFA Basic 3*

THE FORMAT GFA BASIC DICTIONARY

BASIC – Beginners All-purpose Symbolic Instruction Code – Designed in the '70s to make computer education easier. It began as a virtually command-less and slow language, and has developed to very high levels. *GFA* version 3 is now an extra powerful language.

BOX – Command format: BOX X, Y, X2, Y2. Draws a box on-screen. X and Y are the coordinates for the top left of the box, X2 and Y2 are the coordinates for the bottom right of the box.

CIRCLE – Command format: CIRCLE X, Y, R. Draws a circle on-screen. X and Y are the coordinates for the centre of the circle and R is its radius, measured in pixels.

CLS – This command has no parameters: simply type this to clear the screen.

COLOR – Command format: Color Col: This changes the colour of the screen results for some commands.

CONDITION – Examples of conditions are: IF X=2 or IF A\$="Hello". Details next issue.

DEMOUSE – Command format: DEMOUSE P – Changes the mouse pointer on-screen. P is an integer value, between zero and seven, which gives eight different pointers: 0: Arrow, 1: Large X, 2: Busy Bee, 3: Pointing Hand, 4: Flat Hand, 5: Thin Crosswire, 6: Thick Crosswire, 7: Outlined Crosswire

FILENAME – A filename can be up to eight characters long, and has an extension, three characters long – eg FILENAME.TXT.

FORMAT – Techie word for "layout" or "form." Also, the universe's top ST magazine – but you already knew that, didn't you?

GEM – Graphics Environment Manager – Part

of The Operating System (TOS) of the ST. More on this in the later parts of the tutorial.

GET – Command format: GET X, Y, X2, Y2, Sprite\$. The first four values, or variables, are identical to those of the BOX command, and Sprite\$ is the name of the sprite you are picking up or GETting. See PUT.

HIDE – This command has no parameters – simply type it in to hide the mouse pointer.

INTEGER – For those of you not so involved with maths, it's a whole number.

MOUSE – Command format: MOUSE X, Y, B – X and Y tell you the coordinates of the mouse pointer, and B shows which buttons are held down: 0 = None, 1 = Left, 2 = Right, 3 = Both.

PALETTE – How many colours you can have on-screen. The ST has a palette of 16 colours.

PARAMETERS – If a command requires details like coordinates that you must enter, these are called parameters. Examples are: MOUSE X, Y, B or COLOR C. Some commands, like HIDE, have no parameters.

PARENTHESES – These are (brackets).

PIXELS – The small coloured dots which make up the picture on your TV or monitor.

PLOT – Command format: PLOT X, Y. Places a dot on-screen. The X and Y coordinates that you enter show where.

PUT – Command format: PUT X, Y, Sprite\$ – See GET.

SHOWM – This command has no parameters – simply type it to show the mouse pointer.

SPRITE – A piece of graphical data that you can move around the screen.



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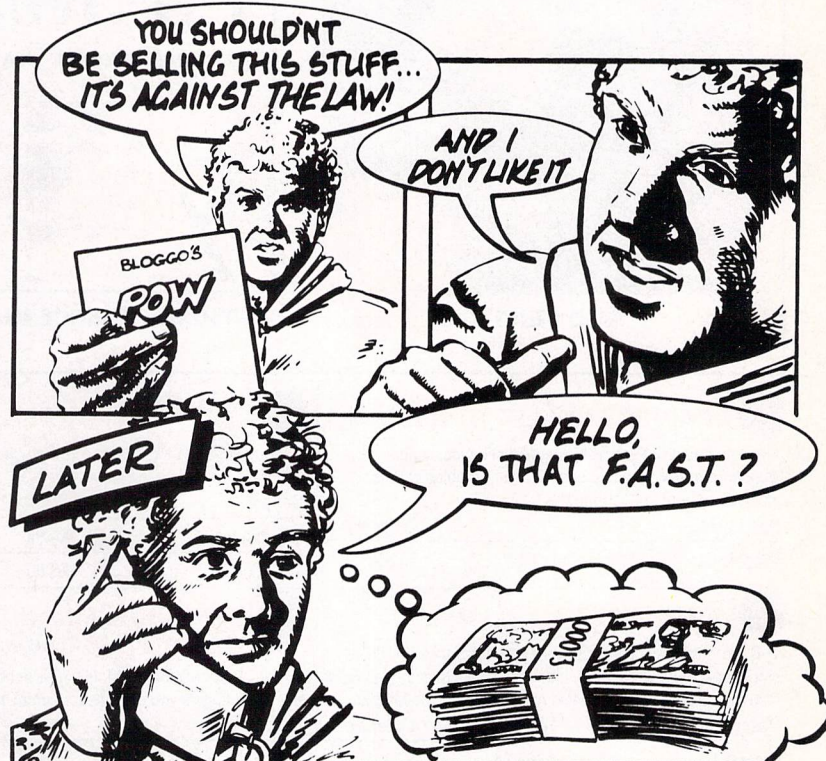
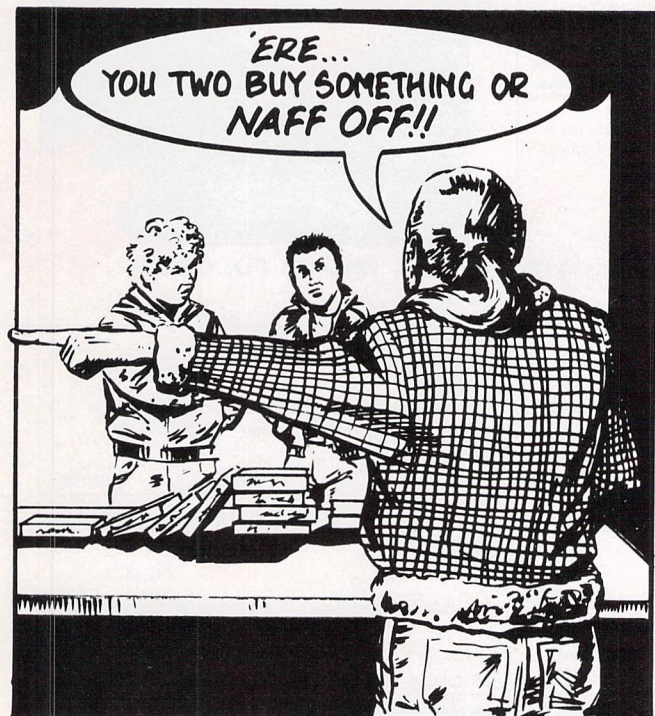
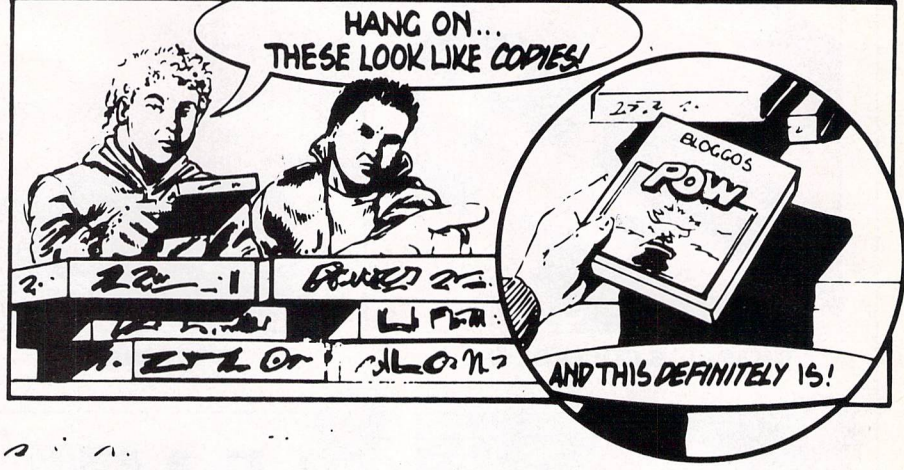
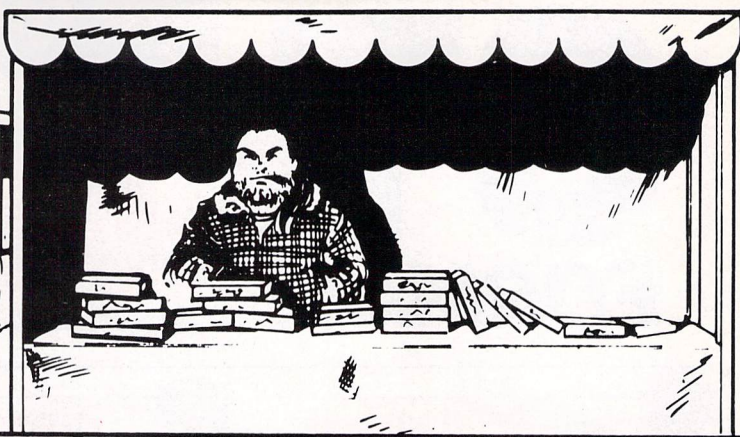
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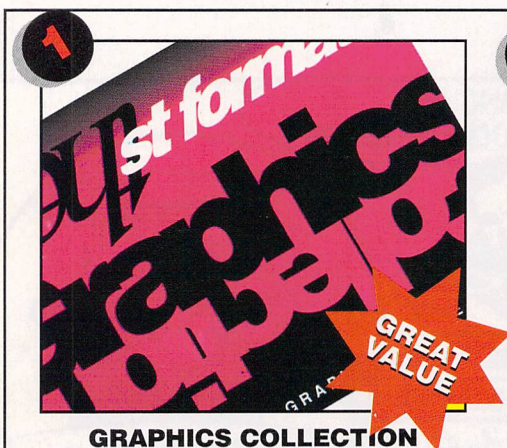
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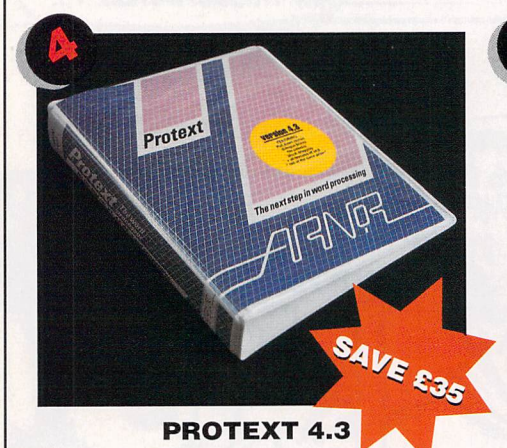
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BACK ISSUES



Want to complete your collection of the ultimate ST magazine and its jam-packed Cover Disks? Postage and packing included!

ST/AMIGA FORMAT

Sorry! Unfortunately we now no longer have any copies at all of any issue of the late, great *ST/AMIGA FORMAT*, the magazine out of which were born magnificent *ST FORMAT* and tatty old wassname, *AMIGA FORMAT*.

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jet powered spit

After *FORMAT*'s recent look at Canon's Bubblejet printer, Peter Crush examines another ink spitting printer, Hewlett Packard's DeskJet 500



■ Hewlett Packard's DeskJet 500: a robust and dependable printer that's cheap to run

DeskJet 500 Printer

MACHINE: ALL STs

PRICE: £689

FROM: Hewlett Packard

CONTACT: 0344 369369

The DeskJet 500 is the third version of what has become known as the poor man's laser printer. It looks identical to the previous models (when you're onto a winner, why change it?) but has extra fonts. The basic design of the machine is like a cross between a stone doorstep and a laser printer. It takes up no more room than the average printer, needing no gap either side since all controls are on the front. It can even go flat against the wall because there's no need for access to the rear either.

The printer takes only single sheets of paper. Most owners use normal A4 sheets (the same size as this magazine page) but it also copes with "foreign" types like US Letter or Legal. The DeskJet also prints on envelopes, regardless of their quality or weight. Another plus is that the DeskJet has inbuilt sheet-feeding – when set up, the printer automatically

feeds itself from a bottom tray and ejects the printed sheets into a top tray.

You have to obtain your own printer lead, and are spoilt for choice here as the DeskJet has both a Parallel and Serial printer port neatly tucked under it. Using a standard IBM printer lead is usually cheaper than buying an ST lead. One particular oddity is that, once set up, you must switch the printer on before your ST.

The results from the DeskJet are just as exciting as the Canon Bubblejet (reviewed last issue). The ink gives a solid and very black black, far superior to any dot matrix printer. Graphics look great; you need to spend well over a grand on a laser printer to better them. And remember you need at least 2MByte of memory in your ST to even consider using the Atari laser printer, whereas the DeskJet works with the humblest ST.

On text, the results are also superb; there really is no difference between the output from the DeskJet and that obtained from a less flexible Daisywheel printer. Speedwise, a page of 1st Word text takes just under a minute to print

"Graphics look great – you need to spend over a grand on a laser printer to better them"

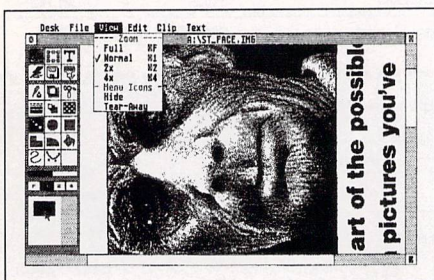
HOW IT WORKS

Conventional printers work by the impact of pins or daisywheel characters through a ribbon, like the typewriter. By contrast, inkjet printers squirt little blobs of ink onto the paper from a large number of tiny nozzles. The DeskJet 500 has 50 little ink jets; its text output detail is virtually as good as a daisy-wheel, and its graphics resolution of 300 dots per inch (dpi) is equivalent to an Atari laser printer. Although laser printers are twice as expensive, the quality gap between them and the latest inkjet machines is now very small.

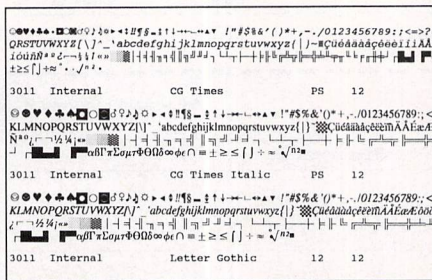
and the test page in *Timeworks* DTP takes 12 minutes – using *Timeworks* on a single floppy machine takes ages to print whatever printer you use. It takes only seconds with a PD program to print out *Degas* P13 pictures, so it seems that the quality of the printer drivers is more important than the speed of the printer.

This is where the DeskJet scores heavily. There are plenty of drivers, utilities and other goodies in the Public Domain which enable you to get the most from this printer. The DeskJet 500 is compatible with DeskJet Plus printer drivers. You can only access the extra fonts built into the DeskJet 500 via software control and in this respect support from the ST software community is assured.

Hewlett Packard quote a price of £689, but even they say you can get it cheaper. If you look around, you might find it for under £499. Replacement ink cartridges, including the printing head, cost about £15, and these print a claimed 1,000 pages of draft quality or 500 pages of letter quality. You really can't go wrong with this printer, and Hewlett Packard provide a three year guarantee with it. **stf**



■ This fellow has been scanned in (from *STF* 15) and then printed out as a screen dump with no noticeable loss of detail



■ The DeskJet 500 prints fine lines and heavy graphics equally well, plus all international characters and symbols

FORMAT RATINGS

DeskJet 500 Printer/£689

Hewlett Packard/☎ 0344 369369

Features 95%

Sturdy, dependable, cheap to run, well supported, long warranty

Speed 90%

OK – it's not as fast as a laser printer

Ease of Use 90%

Everything about it is dead easy to use

Results 93%

Only a laser printer gives better results, marginally

FORMAT VALUE 86%

If it were a little bit cheaper, it might very well sweep the board

The Competition

Canon's Bubblejet at £399 – *STF* 17: 90%

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Sounds magnificent

Recently, I became the proud owner of UBI Soft's excellent BAT game. I instantly recommend it to anyone if only for the excellent sound card which enhances the music.

Will UBI Soft ever consider selling the sound card as an individual product? And is it possible to produce a Graphics Card to enable STE sound capabilities?

Richard Mather
Merseyside

stf At the moment, Richard, UBI Soft have no plans to release the sound cartridge – which delivers sounds through an impressive 16 channels – as a separate product. However, they do intend to release more programs which make use of the cartridge. The first of these is Music Master ST, due for release towards the end of March. If you bought BAT and already own the sound cartridge, you can pick up Sound Master for £45 while everyone else has to pay £50. Watch out for our full review of Sound Master in the next issue of ST FORMAT.

In answer to your other query, no-one is coming forward with a Graphics Card because there aren't yet enough games and serious packages which make use of the STE's abilities.

Dial-a-game

I have recently heard that there are some computer shops that are hiring software out to the public. Is this legal or do the software houses lose out on revenue because of this practice?

I feel this is an excellent idea as users can try the new releases before committing large sums of money to programs they don't enjoy.

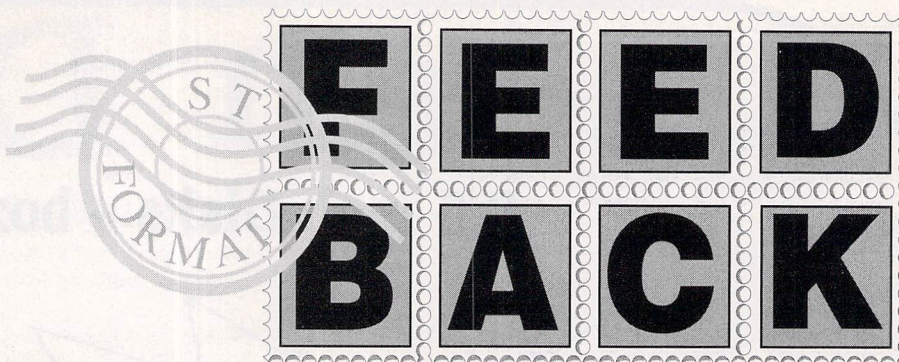
J. Watson
Co. Tyrone, N. Ireland

stf Many computer stores are more than happy to let you try out software in the shop, but this rarely extends as far as letting you take software home to test it out, for obvious reasons – it would be quite easy for people to abuse the system and illegally copy the software and manuals. However, a new sort of try-before-you-buy scheme is being run by Arcanum (☎ 061 873 7102). They are selling top games such as Corporation and Killing Game Show for as little as £6, but to play them you need to contact Arcanum for a password each time you play. If you decide you like the game you can buy the full, password-less version for £6 off. The scheme may be extended to serious software depending on its success.

A slow boat to glory

Being one of the apparent minority who spend more time using the ST for serious applications than for playing games, I was tempted into sending a couple of programs to you for possible inclusion on the STF Cover Disk. I have in fact sent two disks in now, and have heard absolutely nothing from you in each case.

If you can't respond to readers' disks within the quoted four weeks then why don't you warn them to "allow one year for reply," or whatever. If you receive so many disks why do we only ever see a mere one or two readers' programs each month? Surely there must be some very good material sent in. It might make a nice change instead of a RAMdisk accessory (moan),



Write to: Feedback, ST FORMAT, 30 Monmouth Street, Bath, BA1 2BW

a calculator accessory (groan), or a virus killer (anybody lend me a razor blade?).

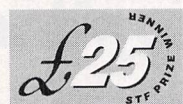
Steve Lloyd
Kent

stf Come on, Steve, what do you want us to do – produce a magazine or fill out an envelope for every one of the scores of disks that drop on our mat? It's impossible for us to send letters of acknowledgment, though if it's absolutely essential that you receive a reply (and I don't see why you can't trust Postman Pat) say so in your covering letter and we'll see what we can do.

We aim to fill the Cover Disk with the best possible programs each month, often related to features or articles within the magazine. For example, our AUTO folders feature (on page 105) also has ten programs on the Disk. We don't forget readers' programs and try to use them wherever possible, but our aim is always to produce a quality Cover Disk – and if that means going to the Public Domain then I have no argument with that.

Eye, eye, Cap'n

With so many new ST owners out there, I would like to take this opportunity to warn new users about the stupidity of software piracy.



It is very tempting to purchase pirated software

or copy a program from a friend. To new ST owners, as I remember myself, piracy does not really seem like theft, but months or years of a programmer's work can be ripped off in seconds without the programmer gaining any benefit at all.

This robs the software houses and the development teams of the money they've earned, which in turn leads to less money being available to spend on software development.

The short-term benefits seem very attractive, but buying original programs protects the development of your investment and gives you a prized software collection rather than a grotty box full of instructionless disks.

Tom Black
Norwich, Norfolk

stf A very good point, Tom. Sadly, part of what encourages software piracy is the availability of copying programs. Laying your hands on a PD disk back-up program, popping round to your mate's house and spending a night exchanging games may not seem like piracy, but it's exactly this kind of activity which damages software publishers most. If only piracy could be eradicated altogether we'd see a welcome fall in the price of ST software, which would benefit everyone. If anyone has any news about software piracy, contact FAST (The Federation Against Software Theft) on ☎ 0800 181 502.

STRAIGHT TO THE POINT

■ Please can you start a new section for people who are bored with the unprofessional nature of BASIC, and who need help with starting in an assembly (or related) language?

Stephen Downing
Launceston, Cornwall

– Bored with BASIC? I don't believe it. It's a wonderfully versatile language and programs like GFA Basic are incredibly fast. Still, if you must have an assembly language article, tune in next month for our feature on programming animation in assembly language. The following month we hope to start a regular assembly language series, so keep reading.

■ Having just come back from a long Christmas break I found to my horror the article in your January edition on faulty STE DMA chips. I looked at the serial number on my box for a red dot but with no luck. Please could you tell me what to do about this since I am considering buying a hard drive. Also could you tell me

if it is possible to upgrade my LC24-10 printer to a colour version and where I buy it from.

Neil Deamer, Hatfield, Herts

– Local computer stores may be prepared to take your LC24-10 in part exchange for a colour version. For our advice on the STE problem, see last issue's DESKTOP pages. (To order back issues, see page 136.)

■ Just a note to express my thanks to Core Design for their help with many of my difficulties playing Corporation. When you consider the price of current software it's reassuring to find people willing to "back up" their product in this way.

Robert Shaw, Rosshire

– Most games software houses run a helpline service to help gamers with any difficulties they encounter in a game. The problems are monitored so future games can be improved. Next time you can't get past that end-of-level monster, give the software publishers a ring.

Shades of grey

Every month I used to look forward to *ST FORMAT* arriving in WH Smith, but after supporting it from the days of *ST/AMIGA FORMAT* this will be probably the last issue I buy. I'm a mono monitor owner and have got used to the Cover Disk being mainly filled with low/medium res programs but looked forward to your reviews and news of the ST scene. Over the last few issues I have noticed *ST FORMAT* becoming more devoted to the game-player and less to the serious user. This last issue confirmed my thoughts. Out of 164 pages I found interesting reading on no more than 14 pages. I know there are many new ST owners around after Christmas but elementary information should be balanced with good serious subjects.

I would like to thank you for the pleasure you have given me in the past, and I'll keep an eye on your magazine in WH Smith.

David O'Connell
Derby

stf This month's questionnaire is designed to give us a better idea of what our readers want to see both in the magazine and on our Cover Disk (so turn to page 133 and fill it in immediately!). As to your other comment, the Christmas season is traditionally dominated by games and we could hardly ignore them. This month's main feature is an in-depth study of ST hardware – is that serious enough for you?

As for monochrome programs on the Disk: obviously we don't want to fill the Disk with mono programs when most of our readers can only access a colour monitor. Even so, I could list at least ten programs on this month's Disk which run in high res. If our questionnaire shows there are a high number of readers with mono monitors, you'll certainly find more mono programs on future Cover Disks.

Pirates on the loose

I read with interest your review of the *RoboCop 2* demo. As co-author of this demo, I understand that the reviewer has every right to state his opinion, but it would be nice if he could get his facts right. The demo has about 14 screens, not the couple that was stated. It was produced from a trailer of *RoboCop 2* which was broadcast on cable television, not from a pirate copy of the film, as he stated more than once.

I'm not complaining about the rating, though for a piece of code that's ten lines long and was done in about 30 minutes I think it's not too bad. Perhaps it would be a good idea to have a section in your magazine where programmers have the right to reply to your reviews.

Harvey Lodder
Bracknell, Berkshire

stf We apologise for suggesting, even in the humorous context of our PD section, that you own a pirated copy of *RoboCop 2*. We're happy to correct the facts too, though ten lines and 14 screens still seems sparse to us. We welcome any suggestions for features or series, but we haven't received enough criticisms from programmers to fill any more than an odd paragraph. Since our reviews are consistently fair, we don't foresee that situation changing – and the thought of filling a page with compliments sends shivers down our collective spine. **stf**

ATARI ON THE CASE?

■ I enjoyed reading the exchange of letters between Mr Gleadow and yourselves. The whole thing reminds me of an adolescents' quarrel. How poor Bob Gleadow must have blushed when he wrote about the STE software compatibility issue.

There really is no defence. The best thing in these circumstances is to plead guilty and hope to put the whole embarrassing affair behind you. But valiant Bob sticks to his guns. "I always take great care," he says, "not to drink more than the legal limit before I step into my BMW. But on this occasion false friends induced me to have one glass too many, though I had told them in good time that I was driving." The magistrate is unimpressed. "But, Your Honour," pleads Bob, "before I came I'd been driving under the influence in France for two months and nobody said a thing."

There is some slight evidence in Bob's confessions that the senior boys in the Atari Corp gang are starting to get some clue of how the Apple and IBM boys operate. Let's hope they get it right so that Atari can hold their heads high again.

David Alwyn Thomas, London

■ I don't know how any rational reader can fail to be incensed by your consistent and tiresome belly-aching about Atari in general and the STE in particular. Are you aware that many first-time buyers are effectively frightened away from the STE by the fears passed on to them by some of your less discerning readers? For the time being, the more persistent of these first-time buyers will take the safe course and buy an STFM.

The STE was introduced and found to have a bug in the Save Desktop routine – okay, big mistake. It clearly should not have happened, but can we put the fault in perspective? To the game-player it doesn't matter a fig. To the serious user, it's an annoyance easily remedied.

Looking at the incompatibility issue – only about five percent of games won't run on an

STE, only three PD programs in The ST Club catalogue don't run and I've had trouble with only one serious package.

But even if there are a small number of incompatible programs, you know why they don't run – you knew without the benefit of an interview with Bob Gleadow – so how can you obstinately blame Atari? Could it be that you daren't hint that the fault lies with programmers who ignored the "rules" because ultimately these are the people who pay for adverts in your magazine?

Finally, the DMA problem. The only way I can defend this one is to say that I have had my STE and my hard drive (a 32MByte affair from Third Coast) since last June and they perform very happily together.

Salvatore Marigliano, Bury

– Obviously we'd rather Atari could get it right every time. If they hadn't messed up with the release of the STE there would be many more STs in homes by now and more people buying *ST FORMAT*. We have no desire to constantly portray Atari as a band of dumbwits with no idea of how to sell water to the Arabs, let alone a quality piece of hardware to people keen to move into computing. However, there's no getting away from the fact that they messed up badly with the STE. Since it's our job to report the news we can hardly overlook the problems they've had. Our news stories have always stressed who the problems are likely to affect, and just because a game-player may not be distressed that his STE won't connect to a hard drive, this information is still of prime importance to a huge number of serious owners with plans to upgrade. Do you suggest we play it down?

All new games are now STE compatible, although there are still problems with some PD software. Looking on the bright side, in one sense it's a good thing that there have been so many problems with the STE – the chances are that from now on Atari might realise they just can't afford to mess up any more.

SINGLE-SIDED TRAUMA

■ I am writing in defence of my letter published in *STF 19*. If single-sided owners are finding it hard at the moment they'll have a big shock in the future. As the software market becomes even more competitive, more games than ever will be produced on double-sided disks. Here's how to upgrade in four simple steps:

1. Buy *ST FORMAT* and look for the Power Computing ad.
2. Realise an upgrade can cost as little as £39.99!
3. Don't purchase your next game.
4. Order the drive.

As you pointed out, single-sided owners were some of the earliest people to support the ST so they probably use their ST for things other than games. If this is the case they can get away with using only half the number of disks they already own – surely enough of a reason to upgrade? Plus of course they can also access the other side of the *ST FORMAT* Cover Disk.

Mark Escreet, Sproatley, Hull

■ As one of the "earliest people to support the ST," one of the first alterations I made to my machine was to install a double-sided drive. It cost over £100 at that time for what was unfortunately a rather poor quality, noisy affair,

which eventually changed itself back into a single-sided drive (with one knackered head) after a few years' use. I recently replaced it for less than £50 with an excellent quality Sony drive from Power Computing, and aside from the rather sketchy and incomplete fitting instructions I have no complaints.

It's now possible to upgrade a single-sided internal drive for the price of a couple of normal-priced games. There can really be no excuse for anyone who takes his computer seriously not upgrading – and anyone who still has his computer after five years must surely take it fairly seriously.

Ian Livingstone, Inverness

– With most serious software and an ever increasing number of games appearing on double-sided format only, the need for single-sided drive owners to upgrade couldn't be more pressing. It's to our benefit that software houses abandon the single-sided format: they could be in a position to put more into a game or serious package without extending it across several disks. This means they don't have an excuse to charge more for the extra disks and it reduces the need for tedious disk swapping. Scour the ads in *ST FORMAT* and you're bound to find amazingly good deals like Power's.

twilight zone

It's true, honest

We hear the funniest stories. This cautionary tale comes from a reader, who I'm sure would rather remain anonymous. He contacted *ST FORMAT* to see if we had any idea why his ST wouldn't work. After spending ten minutes trying to get to the bottom of his problem, we eventually found out what he'd done. It transpired that Anon had taken a drill to the back of his ST in a bid to increase its ventilation – and punctured several holes straight through the casing and into the circuit board.

He was in the process of trying to install a fan when he realised his

ST was bugged. Sadly, we couldn't squeeze this useful gem into our *DESKTOP* pages this month. But we'd like to award Mr Anon the ST Golden Egg Whisk award for outstanding services to stupidity in the face of technology.

If you know of any other closet Egg Whisk candidates who deserve to come out, as the expression goes, write and tell us – we have a comprehensive list of registered nursing homes and a great range of super-strong analgesics. Send your Golden Egg Whisk nominations to: A Sad ST, *ST FORMAT*, 30 Monmouth Street, Bath BA1 2BW.

Too busy to call your only mother?

Look, we know what it's like in this modern post-Thatcher high-pressure business world. Places to see, people to walk over. But if you've got the time to read this, you've got the time to fill in the reader questionnaire on page 133 of this very issue and

mail it to us at the usual address. It's the chance you've always dreamed of – your opportunity to tell us exactly what you want *FORMAT* to be. Do it now and we promise not to let Maureen Lipman get hold of your phone number!

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NEXT MONTH

Thursday 14 March is a day to write in your diary. Why? Because that's the day the next issue of *ST FORMAT* hits the shelves – our 21st in fact, so break open the bubbly and the super big black mamba condoms. We reckon it's going to be something really quite special.

What's in it? Glad you asked! Whether you're thrilled by the graphics in games, dazzled by the programming talent which goes into making sprites or just plain eager to create your own moving visuals, next month's *animation special* is the great feature.

We talk to professional graphic artists about how they draw their sprites. We interview programmers and find out what it takes to make sprites move (four cans of Grolsch usually does me) – and best of all, we've got a special *ST FORMAT* program on the Cover Disk so you can make your own animations. After devouring next month's spon-dacious issue you can impress your friends with the kind of animation found in games like *Space Ace* and *Dragon's Lair 2*.

Of course that isn't all we've got next month. Assuming there are no acts of malevolence from a particularly malevolent God, these promising gems should make it into our 21st issue:

■ There's a very special interview with music-genius Neil Palmer who co-wrote *Smooth Operator* with Sade and has lately been seen hanging around with Halo James. He's produced a song especially for *ST FORMAT* and we look at how he went about piecing it together.

We're putting the track on next month's cor-blimey bulging Cover Disk too, so don't miss it!

■ We also review two brand new programs from Double-Click Software – *DC Utilities* and *DC Desktop*. The latter is an alternative Desktop treading much the same ground as *Neodesk*, while *DC Utilities* is an essential disk of compression programs and other useful software.

■ And of course, there are all your favourite regulars – news, previews and reviews of all that's happening in the ST universe. As usual, we have a stonking games section, headed next month by our mammoth review of Microprose's new *Flames of Freedom*, the follow-up to *MidWinter*. *ST FORMAT* is constructing its own mission within the game so you can be sure that at least one level's going to be infuriatingly addictive. We'll also have pages and pages bursting with unmissable technical and games tips, the usual gargantuan grab of PD software and the most authoritative ST education section anywhere. All this and so much more besides.

To make sure you get your hands on next month's well-trendy canoe – er, issue – fill in this form and hand it to your newsagent. Alternatively, join our swelling ranks of subscribers and guarantee yourself an issue of *ST FORMAT* in tip-top condition for each and every one of the next 12 months (and at no extra charge). Just turn to page 136. Whatever method you choose – I prefer the Immelmann – we'll see you here again on 14 March. **stf**

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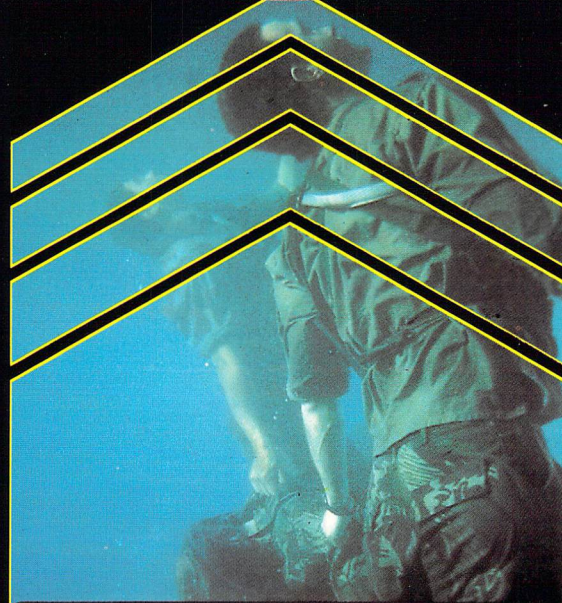
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